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The role of social support in treatment seeking and treatment retention in the military: Examining the function and source of support

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THE ROLE OF SOCIAL SUPPORT IN TREATMENT SEEKING AND
TREATMENT RETENTION IN THE MILITARY: EXAMINING
THE FUNCTION AND SOURCE OF SUPPORT

A Thesis
Presented to
the Graduate School of
Clemson University

In Partial Fulfillment
of the Requirements for the Degree
Master of Science
Applied Psychology

by
Kristen S. Jennings
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Accepted by:
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ABSTRACT

Service members of the United States military occupy jobs that are unlike most in the exposure to exceptional stress and the potential for life-threatening and traumatic on-the-job experiences. Because of the nature of the job tasks and duties, many soldiers are vulnerable to developing mental health problems. Even more problematic, many soldiers experiencing mental health symptoms are not getting the treatment they need. The present study examined how social support can influence a soldier's decision to engage in treatment and stay in treatment. More specifically, the study examined the unique influence of family and friends, fellow unit members, and leaders in the soldier's decision to seek treatment, as well as different supportive behaviors from leaders that affect treatment seeking and retention. Using data from active duty soldiers surveyed at two time points, results indicated that support for treatment seeking is related to whether or not soldiers seek treatment through positively affecting their attitude toward treatment. Support from family members and friends was found to be most related to attitude and treatment decisions. These relationships were further moderated by functional impairment, where the effect of support on treatment seeking through attitude was strongest for those with problems causing low or moderate impairment. In terms of leader supportive behaviors, instrumental leader support was rated as the most influential to soldiers' treatment decisions. Lastly, in terms of treatment retention, initial evidence was found that support from family members and spouses may influence whether or not soldiers drop out of treatment. Results from this study are intended to be informative for

application in enhancing social support resources that are most effective for getting soldiers into treatment and increasing retention.

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CHAPTER ONE

INTRODUCTION

Soldiers in the United States military have unique and demanding jobs where they are embedded in an organizational culture unlike any other and often face difficult and potentially life threatening job tasks. Because of these extreme occupational demands, soldiers are at risk for experiencing psychological distress and mental health problems; however, the nature of the military can create conditions that make seeking treatment difficult or stigmatizing (Langston, Gould, & Greenberg, 2007). In jobs that involve such occupational hazards, it is an organizational responsibility to help soldiers cope with such demands by creating a psychologically safe environment and facilitating needed psychological treatment (Britt & McFadden, 2012). Social support has been recognized as a buffer in stressful experiences (e.g., Cohen & Willis, 1985); however, no research to date has specifically examined how social support can influence treatment seeking and retention in the military context. The proposed study sought to understand how social support both from the organization, through leaders and unit members, and from non-work sources, such as friends and family, may affect soldiers who develop psychological problems and their decisions to seek treatment.

Social norms and influences have consistently been shown to be powerful forces in everyday life. Important others can provide social support that can serve as a resource for individuals to utilize under stressful circumstances (House, 1981). Investigating and applying knowledge regarding social support can serve as a vital tool for helping those in high stress situations to cope with difficult job demands and suffer fewer negative

consequences. The various jobs performed by soldiers could immensely benefit from capitalizing on positive social influences and social support.

Social norms and important others have been linked to treatment seeking, where more positive norms were associated with an increase in the likelihood of seeking treatment (Britt et al., 2011). Social norms also correlate with an individual's attitude toward treatment, which in turn uniquely predicts treatment seeking (Britt et al., 2011). Social support has also been associated with psychological symptoms and treatment seeking rates (e.g., Bristow & Patten, 2002; Pietrzak, Morgan, & Southwick, 2010). Specific studies have examined whether the presence of certain relationships, such as marriage or close relationships with family members, affect psychological health and treatment seeking (e.g., Carney & Kivlahan 1995; Jakupcak et al., 2010; Ouimette et al., 2011). These studies have yielded mixed findings on how these social connections affect treatment. Additional research is needed to further understand how social support may influence the treatment seeking process.

Social support has been linked to positive health outcomes through reducing negative stress responses and increasing available resources (Cohen & Syme, 1985; Cohen & Willis, 1985; House 1981). The stress-reducing and resource building effects of social support could be important for seeking mental health treatment and maintaining treatment progress. The concept of social support, however, is complex and must be examined further in light of that complexity.

Researchers have noted different facets of social support, where support can be shown in multiple forms such as being emotionally supportive, providing information,

affecting how one appraises oneself, or providing tangible resources. These distinctions are made in research as primary types of social support behaviors which are respectively, emotional, informational, appraisal, and instrumental (House, 1981). Other aspects of social support that have been considered include the nature of the support, whether it is perceived or enacted, as well as the source of social support (Barrera, 1986; House, 1981). Some of these distinctions could be significant in understanding how social support may facilitate soldiers getting needed mental health treatment.

Purpose of the Current Study

The current study sought to provide a comprehensive understanding of how individuals can support a soldier seeking treatment, as well as potential consequences of the absence of social support. The present study assumed that a person's attitude toward treatment seeking would be the most direct and strongest influence to seeking treatment (Britt et al., 2011; Vogel et al., 2005); however, social support may be critical in influencing the soldier's attitude, and consequently treatment decisions. The study focused on understanding differences in outcomes based on the type of support provided as well as who provides the support. Research on social support has found that different forms can be associated with different sources of support and have different effects on outcomes (e.g., Cutrona & Russell, 1990; Malecki & Demaray, 2003). Such findings demonstrate the complexity of social support. In light of this complexity, research is needed to determine the specific types of support that are most effective in helping soldiers enter and remain in treatment for mental health problems.

The different functional forms of support mentioned could be important to soldiers seeking treatment: being encouraged emotionally, having information about treatment and available options, and having resources such as time off work or transportation that make treatment feasible. In addition, the hierarchical nature of the military could create an opportunity for leaders to be supportive of treatment by using their authority to require a soldier to seek treatment. Such authoritative support could be a unique form to consider in the military culture, or other similarly hierarchical organizations. These differentiations in social support have not been applied to treatment seeking among employees in high stress occupations, but could be highly informative in application. If different forms of support are more or less effective, appropriate action can be taken to provide the most optimal support from the most influential sources to help employees under high stress conditions to get needed mental health treatment.

In addition to the function of social support, the source of the support could also be of interest. Little research has addressed the importance of the source of social support, specifically in a military context. Past organizational research has distinguished the relative influence of support from multiple sources in coping with job demands, where support from a supervisor has commonly emerged as the strongest influence on employee stress and well-being (Ackerboom & Maes, 2006; Simosi, 2012). In relation to treatment seeking, it could be that there is a strong influence from organizational agents in the military context. Research is needed to examine whether organizational influences or influences from those outside the organization (friends and family) have a stronger effect on whether or not a soldier gets treatment.

If the source of social support matters for soldiers in treatment, targeted involvement from leaders, peers, or family and friends could be further developed to appropriately fit soldier needs. For example, if family and friends matter most, then it would be worthwhile to try to increase family involvement for soldiers with mental health problems. Alternatively, if leadership or peer approval is a stronger predictor of treatment seeking, organizational training on helping soldiers get into treatment would be more influential.

Because social support involves the interaction between someone providing support and the recipient of that support, some characteristics of the individual receiving the support may affect the outcomes of support provided (Barrera, 1986). Given this interaction, characteristics of the recipient must also be considered in addition to the source and function of support. Therefore, the present study examined how the degree of functional impairment of a mental health problem could moderate the relationship between social support and treatment seeking.

Levels of subjective distress and interference with daily life have been found to predict whether individuals seek mental health treatment in both military and civilian samples, where the likelihood of treatment increases as the severity of the problem increases (Angst et al., 2010; Britt et al., 2011). The present study examined the effect of problem severity in terms of functional impairment of the soldier's ability to do their job, their social life, and their family life. The present study proposed that a problem causing high functional impairment may itself warrant treatment, because the motivation to alleviate the highly undesirable symptoms is so great, and the presence of social support

may have a lesser impact on the treatment decision. Those with low functional impairment are also expected to be less affected by social support because the problem seems less significant, so an individual is unlikely to seek treatment. When a problem is causing only moderate impairment, a soldier may have more reservations to seeking treatment. In this situation, social support may be critical to encourage the soldier to seek treatment before a condition worsens. As an additional treatment concern, those with low or high severity problems may be more likely to drop out of treatment, presumably because the problem either seems insignificant or too difficult to handle (Derisley & Reynolds, 2000; Fenger et al., 2011). Social support may be critical to influence those prone to dropout, but be less significant for those already likely to remain in treatment.

The proposed study intended to answer such questions to broaden an empirical understanding of the treatment seeking process for soldiers, as well as provide practical information for application. The proposed study contributed to existing research in several ways. First, the study built on research that has shown social norms to be influential to treatment seeking. This study added to previous research by focusing on social support, which has proven to be a valuable resource in coping with and reducing stress by past researchers.

Second, practical value was added by differentiating the importance of the source and type of support provided, as well as characteristics of the individual that may affect the relationship between social support and treatment seeking. Given the specific and unique culture of the military, certain methods of providing social support may be more influential in encouraging soldiers to seek and remain in treatment. The most effective

methods of providing support may also be dependent on characteristics of the person with a mental health problem, namely the level of impairment the individual is experiencing. These results hold potential for interventions to build social support that are most appropriate to getting soldiers in treatment.

Lastly, in addition to understanding how others encourage soldiers to seek treatment, the study also examined why soldiers may or may not maintain treatment progress and how social support may encourage retention. Treatment dropout is a critical concern for treatment success, so determining what social agents could encourage retention would be an incremental contribution to the research on treatment seeking as well as furthering treatment retention in practice. These questions were addressed empirically, incorporating longitudinal analyses to strengthen conclusions about what influences treatment seeking and retention over time and how social support may be used to enhance positive outcomes.

The proposed study was conducted using data collected as part of a larger project on facilitating the receipt of mental health treatment by soldiers in the U.S. military. As part of this study, survey data was collected at two time points from active-duty soldiers. This data was used to determine the unique influences of family and friends, unit members, and leaders on soldier attitudes toward mental health treatment and subsequent decisions to seek treatment. Determining the differences in support sources was addressed using data from all soldiers who reported experiencing a mental health problem or screened positively for a disorder as determined by PTSD, depression, and alcohol scales included in the survey. Further, this study addressed how different sources of

support and supportive behaviors from leaders affect the soldier's decision to seek treatment and treatment retention. Survey items addressing those influences to the treatment decision were only completed by those who had already sought treatment for a problem. Soldiers who had sought treatment responded to how influential different individuals were to the treatment decision (e.g., spouse/family encouraged me, fellow soldier or friend encouraged me) as well as how different leader behaviors (e.g., allowing time off work, providing information, being supportive) affected their decision to get treatment.

The following chapters will review relevant literature to address the present research questions. Chapter 2 provides a broad review of the social support literature, including definitional issues, conceptual distinctions, and how social support relates to stress. In chapter 3, special attention will be directed toward leadership, namely support from leaders and how different leader behaviors may affect subordinates. Chapter 4 will review research on mental health problems in the workplace and seeking help for such disorders. Special attention will be devoted to research on treatment seeking and treatment retention in the military. Specific information will be provided on how social support from family and friends, unit members, and leadership may influence a soldier's attitude and decision to seek treatment and remain in treatment. Lastly, chapter 5 will address functional impairment as a potential moderator of the relationship between social support and treatment seeking. Hypotheses will be presented at the conclusion of the literature review in chapter 6. Details of the study method will be provided in chapter 7, followed by the study results in chapter 8 and a discussion of the findings in chapter 9.

CHAPTER TWO

SOCIAL SUPPORT

Social relationships have long been of interest to psychology researchers, with social support emerging as a popular concept in the 1970s (Barrera & Ainlay, 1983). Since then, social support has received an extensive amount of research attention. The positive effects of social support have been of interest to many researchers with focuses on a wide variety of environments and populations. In addition to benefits of social support, researchers have also noted how a lack of social support can be detrimental to health and well-being. Thus, social support is not only important because of the benefits it provides when available, but also because of the harm that may be caused when it is lacking in a time of need.

With the quick growth in the social support literature, the concept developed with little clarity (Barrera & Ainlay, 1983; Langford, Bowsher, Maloney, & Lillis, 1997). Social support can be broadly defined as assistance given to others, an exchange of resources between at least two individuals that is intended to enhance the well-being of the recipient, or the perception that others would provide assistance if needed (Langford et al., 1997; Shumaker & Brownell, 1984). This definition is fitting to the more global concept of social support; however, the construct is complex. Barrera (1986) has argued that clarity in operationalization of social support is needed. He argued that the global concept of social support should be abandoned and more precise concepts should be used to fit more specific models, but this practice has not been universally adopted.

Social support can be examined in a variety of ways. Social support has been shown to be significant as a predictor of health and well-being outcomes or an intervening variable in relationships between stress and negative health or well-being outcomes (Callaghan & Morrissey, 1993; Cohen & Willis, 1985; Viswesvaran, Sanchez, & Fisher, 1999). There are also different options for the operationalization of social support. A general social support measure has commonly been used in past research. More specific conceptualizations are also available that differentiate the function or nature of support provided. The following sections will review definitional properties of social support, functional differentiations, sources of social support, and the relationship of social support to stress reduction.

Conceptual Distinctions of Social Support

A primary distinction in the conceptualization of social support is in the nature of support given. Researchers have distinguished between perceptions of support versus supportive behaviors, referred to as perceived support versus received or enacted support. These two constructs have been found to be related, but distinct (Haber, Cohen, Lucas, & Baltes, 2007). Perceived social support refers to a cognitive appraisal of how connected one is to others and has support available, and/or how satisfied one is with that available support (Barrera, 1986; Sarason, Sarason, & Pierce, 1990). Emphasis is on the individual's perception of resources available, that may or may not be reflective of the reality of those resources. Although perceived social support may not capture the reality of specific behaviors, it has been linked to health outcomes more consistently than enacted support (Haber et al., 2007).

Enacted social support goes beyond a recipient's perceptions to the actual behaviors engaged in by the support provider. Enacted social support can be defined as specific actions and behaviors people engage in to provide support (Haber et al., 2007). Measuring enacted support helps to gauge the responsiveness of others in giving support when an individual needs it (Barrera, 1986). These types of measures have been thought to be more accurate by asking research participants to recall specific examples of behavior rather than general impressions (Barrera, 1986). Despite such beliefs regarding the accuracy of these measures, evidence suggests enacted support predicts outcomes less consistently than perceived support (Barrera, 1986; Sarason, Sarason, & Pierce 1990).

The relationship between perceived and enacted support is somewhat unclear. Haber and colleagues (2007) found perceived and enacted support measures to be moderately correlated in their meta-analytic study. Some researchers have proposed that the two forms of support may be codependent, where received support may have a positive effect only if it is perceived as supportive and satisfactory (Barrera 1986; Dunkel-Schetter & Bennett, 1990; Sarason et al., 1990). The codependence of enacted and perceived support would be consistent with the idea that perceived support is a more reliable predictor of outcome measures, where the provision of supportive behaviors may be necessary but insufficient. As discussed previously, acknowledging the interaction between objective support given by a provider and a recipient's perceptions may be critical in providing optimal support.

Barrera (1986) also distinguished the concept of social embeddedness from perceived and enacted support. Social embeddedness refers to the density or number of

connections a person has with others (Barrera, 1986). This definition of social support pays less attention to the nature of support provided, and focuses on the presence of social relationships presumed to be supportive. While the measure does highlight a potential community that a person could use as a resource if needed, it does not illuminate the processes involved in providing or receiving support (Barrera 1986; Barrera, Sandler, & Ramsey, 1981). Conclusions based on the conceptualization of social support as social embeddedness are mixed and depend largely on the detail with which social embeddedness is defined (Barrera, 1986).

Beyond the distinction of the nature of support, researchers have also paid attention to the function of social support. Early researchers acknowledged that not all supportive behaviors are equal and began to classify supportive behaviors (e.g., Barrera, Sandler, & Ramsay, 1981; Barrera & Ainlay, 1983). The Inventory of Socially Supportive Behaviors (ISSB) was one of the first scales developed to understand what individuals actually do to provide support in the helping process (Barrera, Sandler, & Ramsay, 1981). A factor analysis of these supportive behaviors in a later study revealed four behavior dimensions: directive guidance, non-directive support, positive social interaction, and tangible assistance (Barrera & Ainlay, 1983). These major dimensions have since been refined, but this initial research highlighted that all supportive behaviors are not necessarily equal. Barrera and Ainlay (1983) encouraged researchers to attend to specific forms of support that may differentially buffer specific types of stress.

Further research and theory modified the types of supportive behaviors into the four major categories of informational, emotional, instrumental, and appraisal support

(House, 1981; Barrera, 1986; Langford et al., 1997). This conceptualization of social support functions has become more widely used. Each type of support in this framework will be further reviewed.

Emotional support involves providing care, empathy, love, or trust to someone (House, 1981). Emotional support would most likely be rendered through communication that conveys that an individual cares for, values, or identifies with another. Emotional support is important in times of stress because it leads the person to feel that he or she is cared for by others (Cutrona & Russell, 1990). Under various stressful circumstances such as strain, unemployment, illness, or threats to safety, emotional support has been found to increase positive outcomes and decrease negative outcomes such as depression (Cutrona & Russell, 1990). Emotional support seems to be one of the most important of the four types of support. However, it should be noted that emotional support is highly dependent on perceptions of the recipient (House, 1981).

Instrumental support involves behaviors that directly aide the individual in need (House, 1981). Instrumental support may involve providing tangible goods, services, or aid to another (Barrera 1986; House, 1981; Langford et al., 1997). Examples include providing money or performing work duties for another. House (1981) warns that purely instrumental support can be problematic if the help is not perceived well. For example, providing money to someone signals that they are believed to be in need of money and dependent on others. However, instrumental support still has been found to predict positive health outcomes in stressful times (Cutrona & Russell, 1990).

Informational support is given through providing information to another (House 1981; Langford et al., 1997). Informational support may be important during a stressful time, where a person gives information, advice, or guidance to help problem solve (Cutrona & Russell, 1990). Informational support can be very positive in that it helps people to help themselves, thereby avoiding some of the potential negative consequences of just providing instrumental aide (House, 1981). Informational support provided during times of stress has been found to reduce depressive symptoms and increase positive affect (Cutrona & Russell, 1997).

A final type of support is appraisal support. Appraisal support is given when an individual provides information regarding self-evaluation (House, 1981). This can also be called affirmation support where the person providing appraisal support is affirming that some action or statement made by the recipient is appropriate (Langford et al., 1997). An example of appraisal support would be feedback from a supervisor that the individual is doing good work. These types of expressions help increase an individual's perceptions of self-worth and acceptance. The four distinctions in types of social support are important to consider in order to match support to the needs of the person and the situation to be optimally effective in reducing stress and associated negative reactions (Cutrona & Russell, 1997).

Social Support and Stress

Much research has focused on how social support can affect physical, psychological, and emotional health and well-being. Various models and conceptualizations have been created to understand how social support may be involved

in the stress-response process. Social support may support health and well-being by regulating thoughts, feelings, or behaviors that promote health, building a sense of purpose in life, or facilitating health promotion behaviors (Callaghan & Morrissey, 1993). In relation to the stress process, social support has been shown to impact individuals in difficult circumstances in many ways. Social support may reduce strain experiences, influence the perception of stressors, or moderate the stress-strain relationship (Viswesvaran, Sanchez, & Fisher, 1999).

Barrera (1986) reviewed different approaches to conceptualizing the role of social support in stress responses. In terms of the activation of social support, exposure to stressful events or situations could lead support networks to be responsive to the individual or for the individual to move towards the support system. How social support then exerts its effects has been considered both as a direct effect and a buffering effect (Cohen & Willis, 1985). According to the buffering hypothesis, social support may act as an intervening variable which buffers individuals from stressful events or helps people to perceive events less negatively. Direct effects models propose that social support has a main effect on reducing stress itself. Support has been found for both of these models in past research (Cohen & Willis, 1985).

Much organizational research views social support as a moderating variable in the relationship between stress and negative outcomes. The Job Demands-Control-Support Model (Johnson & Hall, 1988) elaborates on the Job-Demands-Control Model (Karasek, 1979) model by considering social support as a specific resource for mitigating the negative effects of job demands. Johnson and Hall (1988) found that workers with high

demands, low control, and low support exhibited a higher prevalence of cardiovascular disease as compared to employees with low demands, high control, and high social support. This model demonstrates the utility of social support as a resource to reduce negative responses to demands.

Bliese and Castro (2000) built upon the Demands-Control-Support model by examining support as a function of the work-group environment. In their study of Army soldiers, they found a three way interaction between demands, role clarity, and support. In this interaction, role clarity was only influential in reducing psychological strain caused by demands when social support was high. This study highlighted a contextual boundary where a supportive environment may be necessary for resources such as control or role clarity to influence the demands-stress relationship. Findings such as this demonstrate that social support may have utility itself in reducing stress, but also may serve as a necessary condition for other resources to be useful.

This view of social support as a resource can be important. As framed in the Conservation of Resources model (Hobfoll, 1989), people need resources to deal with daily demands. The Conservation of Resources model is resource-based, and argues that people strive to retain, protect, and build resources. Hobfoll (1989) defines resources as objects, personal characteristics, conditions, or energies that are valued by the person or that can help the person to obtain those things valued. Social support could be a valuable resource itself, and could help individuals to accumulate other resources such as boosting esteem or helping to obtain tangible resources. People experience strain when they

perceive a potential threat of loss or experience actual loss of those resources. A lack of resource gain can also be perceived as threatening.

In high stress job environments, cycles of resource loss or threat of loss can be especially troubling. Research has shown that disasters and traumatic experiences can involve immense resource loss. Resource loss, as framed by COR theory, has been found to be a strong predictor of motivation to cope, negative reactions to trauma, PTSD, or psychological distress for victims of hurricanes or earthquakes (Freedly et al., 1994; Ironson et al., 1997). In the case of soldiers, high situational demands can constantly threaten mental, physical, and emotional resources. Resources may be of prime importance in these high stress situations, as research has noted resource gains to be exceptionally important in times of high resource loss (Hobfoll, 2001).

Social support could be a critical resource that can help to replenish lost resources itself as well as help cultivate additional resources such as personal attitudes or motivation (Hobfoll, 2001). In terms of different functions of support, instrumental support could be critical to helping individuals who have suffered tangible resource loss. Individuals could provide financial aid to those who have lost money or help complete work tasks for those who are physically unable. Emotional or appraisal support could increase resources by enhancing an individual's sense of meaning or increasing feelings of esteem.

Several factors may influence how effective social support is as a resource in reducing negative reactions to stress. As previously mentioned, social support needs to appropriately match the present demand. Pertaining to organizations, some studies have

pointed out the source of social support may result in different effects on different outcomes. Leaders have been demonstrated to be especially helpful in reducing employee strain. For example, Ackerboom and Maes (2006) found that increases in supervisor support corresponded with decreases in psychological distress, but psychological distress was not significantly related to coworker social support.

Studies from other areas of research have found similar distinctions in the effects of source of support on important outcomes. Malecki and Demaray (2003) studied students in grades 5 through 8 to determine the different types of support they perceived from different sources and whether different types of support were more related to social, behavioral, or academic outcomes. They found different sources of support (teachers, parents, classmates, and close friends) to differentially impact different outcomes. In general, students perceived similar support from parents and teachers; however, girls were likely to perceive higher support from classmates and friends. Concerning the types of support, emotional and informational support were most highly reported for parents, informational support was highest for teachers, and emotional and instrumental support were highest from classmates and friends. These sources and types of support then had different outcomes. For example, emotional support from teachers was a unique predictor of social skills and academic competence while supportive behaviors from parents were associated with personal adjustment.

Certain sources of support may be more effective in reducing strain because they are more appropriate for the needs of the recipient. For example, Halbesleben (2006) demonstrated in a meta-analytic study that the source of support can affect the

relationship between social support and burnout. This study found that work sources of social support were more highly related to the exhaustion dimension of burnout, presumably because of the more direct relationship with work demands. Non-work sources of social support were more strongly related to depersonalization and personal accomplishment. Halbesleben (2006) suggested that even clearer results could be achieved if the type and source of social support is considered. Considering both the source and type of support could provide the best match for an individual's needs to cope with a demand.

The research reviewed so far has focused on how social support can produce positive effects. In these findings it is implied that a lack of social support would result in less positive outcomes. It is important to emphasize that insufficient support can be problematic for individuals in stressful situations. Some research that addressing insufficient support suggests that increased distress or negative life events increase the need for support which can make available resources seem inadequate (Barrera, 1986). A lack of social support itself can then be experienced as stressful. The stressful effects of insufficient support are demonstrated by findings of direct negative correlations between social support and strain or psychological distress (Viswesvaran, Sanchez, & Fisher, 1999). Outcomes of low support are an important consideration in high stress work environments where organizations need to be sure that support resources are adequate to cope with stress, and that the availability of those support resources are made apparent. It is necessary for organizations and leaders to be aware that not having support does not just prevent positive outcomes but can also generate negative outcomes itself.

In application to the present study, a lack of support could be perceived as a barrier to those who may be experiencing a mental health problem. The adequacy of support could also be affected by the support source, where a lack of support from essential others (e.g., leaders allowing time off to attend treatment) could be detrimental to getting help. Related to theories of resource loss, soldiers may feel threatened that the problems they are encountering could result in a loss of social support if others view them in a stigmatized manner. So during these times of resource loss from the disorder or situations, as well as potential perceptions of threat of loss of other resources, soldiers need social support to replenish lost resources.

Past findings show that considering the type of support and the source of support may be valuable in predicting outcomes and applying findings to help individuals in stressful situations cope with demands. Specifically in the military context, unit members and leaders may have different effects on a soldier than friends and family members. Leaders are in an exceptional position in the military to provide support in many ways that other sources of support cannot. Leaders have authority to allow time off work or even command refer a soldier to treatment. Because leaders are traditionally well respected in the military, leaders can also be highly influential through the example they set themselves, the climate they create within their unit, and the manner in which they act as a resource to soldiers in need of help. Because leaders can be so influential to soldier decisions, a primary interest of the present study was how supportive behaviors from leaders affects followers' decisions to seek treatment; therefore, the following section will address background on leadership research and its application to the military realm.

CHAPTER THREE

LEADERSHIP

Leadership is a popular topic in organizational research because of the impact leaders can have on follower attitudes, behaviors, job performance, and well-being. Positive leadership can be critical in helping employees cope with difficult circumstances and avoid negative outcomes, where leaders can serve as a buffer in stressful situations (Bliese & Castro, 2000; Bliese & Halverson, 2002). In order to understand how leadership could be influential in treatment seeking for soldiers, a review of leadership research will be provided.

Leadership can be conceptualized in a variety of ways. Controversy exists in defining leadership, but most conceptualizations include a person exerting some sort of influence over followers (Yukl, 1989). Yukl (1989) summarized three major views of what constitutes good leadership. These views are trait research, behavior research, or situational theories. Theories from the trait perspective propose that good leaders are born, not made. Trait theories suggest that successful leaders possess some innate dispositions or personality traits that enable them to be effective. Behavior theories focus on what leaders do and what behaviors constitute good leadership. From this perspective, it is what the leader does that matters; therefore, behaviors to improve leadership are trainable. Further developments in leadership theory began to incorporate the impact of the situation. Situational or contingency theories highlight the interaction between a leader and his or her environment, where much of what the leader does and the leader's results depend on the environment, including organizational and follower characteristics.

All of the discussed views of leadership have received some empirical support. The present concentrated on the behavioral approach to leadership, focusing on specific behaviors leaders may engage in, and how such behaviors affect subordinates. Leader behaviors that can encourage subordinates to seek treatment when experiencing a psychological problem are of primary interest.

One of the most basic, yet supported, taxonomies of leader behaviors divides behaviors into broad categories of initiating structure and consideration (Fleishman, 1953; Fleishman, Harris, & Burt, 1955). Initiating structure behaviors facilitate task performance. These are more standard leadership behaviors to accomplish the goals of the organization, such as organizing tasks for subordinates, establishing performance expectations, and monitoring progress on tasks. Consideration includes more personal behaviors from leaders that are used to demonstrate that subordinates are valued and cared about. Consideration behaviors may include understanding employee problems or showing interest in subordinates' non-work lives. This classification of behaviors has also been referred to as job-centered leadership behavior versus employee-centered leadership behavior (Likert, 1961), as well as concern for production versus concern for people (Blake & Mouton, 1964). These distinctions all reflect differences between a focus on task completion versus a concern for interpersonal relationships.

The two-component measure of leader behavior has been shown to be valid for predicting relevant outcomes despite the simplicity of the taxonomy. Judge, Piccolo, and Ilies (2004) conducted a meta-analysis of studies using the consideration and initiating structure measures of leadership, finding support for the validity of using this basic

distinction. Initiating structure and consideration were found to be related but distinct. Initiating structure displayed a stronger relationship with outcomes such as leader job performance and group-organization performance. Consideration was more strongly related to measures of follower satisfaction with the leader and with their job, motivation, and ratings of leader effectiveness (Judge et al., 2004).

These components of leadership also fit the occupational requirements of being a military leader. Leaders must be exceptionally efficient in executing critical job tasks, and because their subordinates are in high-stress conditions, leaders need to be attentive to interpersonal relationships and show concern for subordinates. Morath, Leonard, and Zaccaro (2011) provided an overview of what they considered to be the challenges and opportunities which leaders in the military face. They elaborated on four roles that military leaders must occupy. Two roles that focus primarily on job tasks and mission completion include warrior-leader and leaders as experts and technicians. The warrior-leader must lead followers into dangerous situations, including preparing, training, and leading them while trying to balance the safety of their followers with achieving mission success. In addition, leaders must have skills as technicians and experts, developing and retaining technical skills that are required of their field. These two roles are critical in getting the job done, but attend less to employee-centered behaviors.

The additional two roles described by Morath, Leonard, and Zaccaro (2011) involve consideration behaviors that challenge leaders to focus on showing concern for soldiers in their unit. First, the leader must be a caretaker of service members and their families. Leaders must protect the physical and emotional welfare of soldiers and their

families; this is exceptionally difficult when soldiers are experiencing high rates of psychological illness and injuries. Second, the leader must be a caretaker of the institution and maintain a positive work environment to retain members of the organization. This would include making employees feel valued and cared for to uphold a positive unit climate.

These types of expected duties for leaders to get results and show consideration for people are also highlighted in military leader training. The Army leadership training manual (Department of the Army, 2006) provides three key competencies leaders should demonstrate through observable behaviors. The first competency is to lead through actions such as providing purpose and direction, building trust, leading by example, and facilitating positive communication. Leaders must also develop their subordinates through creating a positive work environment, preparing themselves as a leader by expanding knowledge, and developing the unit to help them grow, learn, and gain skills. Lastly, leaders are to achieve, getting results through developing plans and accomplishing tasks. These competencies show examples of both job-centered and employee-centered behaviors that are stated as expectations of military leaders.

Predictive validity of initiating structure and consideration measures has been shown in military settings for leadership performance outcomes (Petty & Pryor, 1974). O'Reilly and Roberts (1978) found high consideration and initiating structure to be associated with positive subordinate attitudes and performance in their sample of Navy personnel. These effects were to some extent situation dependent, as the strongest effects

occurred when subordinates had high mobility aspirations and supervisors were perceived to have high influence.

In stressful work environments, initiating structure and consideration may both be critical behaviors for leaders. Leaders must be efficient in executing tasks well and must be able to help subordinates through potentially difficult experiences. Consideration behaviors from leaders may be particularly influential for employee health and well-being. A specific consideration behavior of interest in the present study was providing social support for treatment seeking. In relation to the four types of supportive behaviors previously discussed, leaders are in an optimal position to provide informational, instrumental, and emotional support for employees in stressful situations. They can give information about resources or problem solving, they can offer actual assistance with job tasks or allow adjustments in the work tasks or schedule, and they can be emotionally supportive during stressful circumstances.

An additional person-oriented role of good leadership may be to foster a positive work environment. Researchers have noted that leaders can have a prominent influence in creating a climate that is supportive for individuals who may be under high stress. Research in this area uses the terms leader support as well as supervisor support that reflect essentially the same construct. Bliese and Halverson (2002) sought to understand the effects of leadership climate by examining group level effects of social support as a stress buffer using an Army sample. They found that having work of little significance in a unit was associated with psychological hostility; however, when a positive leadership climate was present, this negative relationship was weakened. La Rocco and Jones (1978)

did not find evidence in their study of Navy personnel that social support from leaders and coworkers served as a buffer in stressful experiences; however, they did find direct effects that high levels of support from coworkers and supervisors are associated with positive outcomes such as satisfaction, self-esteem, and commitment.

The effectiveness of a supportive leader and unit climate may depend on factors such as the match between the stressor and the support resource. Mayo, Sanchez, Pastor, and Rodriguez (2012) sought to clarify the mixed findings on supervisor support as a stress buffer in their study of service and manufacturing employees. In their study, they found that the effectiveness of support depends on the source of the stress. Specifically, they found supervisor support to buffer the negative effects of physical stressors; however, they did not serve as a buffer for role stressors. The researchers proposed that supervisor support may not ameliorate strain caused by role conflict because that stressor in some way originates with the supervisor.

Research has also found relationships between supervisor support and more specific health outcomes. For example, Jansson and Linton (2006) demonstrated that leaders can help prevent health issues as well as influence those who may be currently experiencing health issues. In their study of a sample of Swedish workers, they found that high work demands increased an individual's risk for insomnia; however, for those who reported insomnia at a baseline measure, those with high leader support had a decreased risk of reporting insomnia at a follow-up assessment.

Little research has been conducted on how leaders may be influential in the specific stressful time of employees experiencing a mental health problem and deciding

whether or not to seek treatment. Britt and McFadden (2012) drew upon evidence from the safety climate literature, arguing that leader support may be a major component in decisions to seek treatment in organizations with a complex hierarchy, such as the military, because of the influence leaders have in shaping the organizational climate. As Zohar (2010) noted in relation to safety climate, leadership is a primary antecedent of climate. Similarly a leader's attitude and behaviors toward treatment could be influential in creating an environment in which treatment may or may not be accepted as a solution for dealing with mental health issues.

Such questions about leader influence in treatment seeking need to be further addressed. Military leaders face an exceptional challenge in trying to prepare soldiers for combat readiness characterized by resilience and strength while also trying to encourage maintaining psychological health during stressful times, potentially requiring professional help. The next section will address mental health concerns and issues with getting employees in high-stress occupations into treatment. Shortcomings in getting soldiers into needed mental health treatment and how different sources of support may be effective in this process will be discussed.

CHAPTER FOUR

SEEKING TREATMENT FOR MENTAL HEALTH PROBLEMS

The psychological health of employees has gained attention from researchers and organizations in recent years. Military personnel have been noted to be especially susceptible to experiencing work stress. Pflanz (2002) surveyed active duty military personnel regarding their levels of work stress, finding that military personnel experienced significantly higher job stress than civilian workers. In this sample, 26% reported suffering from significant work stress, 15% endorsed feeling emotionally distressed, and 8% of those reported stress severe enough to disrupt their emotional health (Pflanz, 2002). Organizations may attend to employee psychological health, such as by offering employee assistance programs or stress management interventions (Cooper, Dewe, & O'Driscoll, 2011). However, additional research is needed to understand the utility of organizational assistance and what determines whether resources are actually used.

Seeking professional help can be critical to overcoming mental health problems that disrupt daily life and well-being. Encouraging employees to get treatment is important not only for maintaining employee well-being but also organizational functioning. A study of full-time employees in Australia estimated a 5.9 billion dollar reduction in employee productivity as a result of psychological distress (Hilton, Scuffham, Vecchio, & Whiteford, 2010). Hilton and colleagues (2010) further noted that decrements in productivity were lessened when employees were in treatment for their psychological problem.

The rate at which individuals choose to get treatment for psychological problems can vary widely. For example, Bristow and Patten (2001) reported from a review of the help-seeking literature from multiple populations that the rate of seeking help for depression ranged from 17 to 77.8%. Ranges vary in military settings as well with studies reporting anywhere between 8% and 27% of personnel seeking treatment when experiencing a problem (Hoge et al., 2006; Kim et al., 2010). Research is needed to better understand what factors account for this variation in decisions to seek treatment.

It is apparent that there is much more that contributes to a decision to get treatment than simply meeting diagnostic criteria. In the general population, demographic factors such as age, ethnicity, or gender have been associated with getting treatment, where women, middle to older aged adults, and individuals of white ethnicity were most likely to seek help for a problem (Angst et al., 2010; Bristow & Patten, 2001). Factors relating to the disorder itself, such as the severity of the problem, the degree of impairment, the duration of symptoms, and comorbid disorders can also influence treatment decisions (Angst et al., 2010; Bristow & Patten, 2001). Important others may also play a critical role in the decision to seek treatment. Bristow and Patten (2001) noted that enhanced social support, including more contacts, high quality relationships, and encouragement from family and friends to seek help, was associated with a greater likelihood to seek treatment for depression.

Many of the barriers and facilitators for seeking treatment in the military are similar to those identified in the general population; however, some barriers, such as

stigma, may be especially heightened in military settings. Specific aspects of treatment seeking in high stress occupations are discussed further in the following section.

Treatment Seeking in High Stress Occupations

A concerning prevalence of mental health problems has been established in various high stress careers. Rates of mental health problems as a result of exposure to work stressors have been investigated with employees such as military personnel, emergency responders, police officers, and war correspondents. Studies have found that up to 30% of military personnel that have engaged in combat operations suffer from psychological disorders (Britt et al., 2011; Hoge, Auchterlinie, & Milliken, 2006; Hoge et al., 2004). Somewhat smaller but still significant rates of post-traumatic stress disorder (PTSD) have also been reported in other high stress occupations such as emergency ambulance workers and police officers (Bennet et al., 2004; Robinson, Sigman & Wilson, 1997). These examples all show that a substantial number of employees experience psychological symptoms because of occupational hazards to which they are exposed.

Further review of the treatment seeking literature will focus primarily on military personnel, but it is important to acknowledge that other high stress careers, such as those previously mentioned, are affected by the same issues pertaining to mental health problems and treatment seeking. Concerns about mental health issues are prevalent in military settings. Coll, Weiss, and Yarvis (2011) made the argument that military employees occupy jobs where no one leaves unchanged. The occupational requirements and circumstances of being a soldier can lead individuals to experience situations that are

psychologically distressing where exposure to intense stressors, such as combat, can increase experiences of psychological problems.

A study of service members who had returned from Iraq or Afghanistan found that exposure to combat situations was significantly related to reports of mental health problems (Hoge, Auchterlonie, & Milliken, 2006). Many studies have confirmed the prevalence of mental health problems reported by soldiers. For example, a study of reserve component veterans found that 41.8% reported experiencing at least a mild psychological problem (Britt et al., 2011). Hoge, Auchterlonie, and Milliken (2006) found that 11% to 19% of active-duty soldiers returning from Afghanistan or Iraq screened positive for a mental health problem such as PTSD, depression, or anxiety.

Unfortunately, a large majority of soldiers who could benefit from mental health treatment do not seek such treatment. Negative attitudes of soldiers regarding mental health treatment can keep them from seeking needed treatment for psychological problems (Kim et al., 2011). A study of National Guard soldiers reported that over half of participants that screened positive for mental health problems were not engaged in mental health treatment (Kehle et al., 2010). In a study of Reserve Component veterans, out of 41.8% percent of veterans reporting a problem, 34.7% reported no interest in receiving treatment for the problem (Britt et al., 2011). These rates are concerning given the potential costs of not seeking treatment for the individual soldier's well-being as well as organizational functioning.

The prevalence of psychological problems and lack of treatment have created a concern that has gained research attention. Researchers have sought to identify what

barriers keep soldiers from seeking treatment. Common factors influencing mental health treatment seeking include the stigma of seeking treatment and practical barriers associated with getting treatment (Britt et al., 2008; Hoge et al., 2004).

Stigma involves beliefs that getting treatment for a mental health problem would be embarrassing, may be harmful to an individual's career, or cause peers to lose confidence in them (Britt, 2000). Stigma associated with a psychological problem can be strong in the military. One of the first studies addressing the stigma of psychological disorders in the military compared psychological problems to medical problems. Britt (2000) compared perceptions about psychological health and the screening process to medical conditions. Service members returning from a peacekeeping mission to Bosnia were surveyed upon their return, where they had to complete psychological and medical questionnaires. If they screened above a given cutoff on either questionnaire they had to meet with a professional for further evaluation. Results showed that compared to a physical health problem, service members were more concerned about stigma associated with psychological problems. Soldiers were also less comfortable talking about psychological problems and were less likely to report that they would follow through on referrals for mental health treatment (Britt, 2000). Britt (2000) also noted that soldiers felt even more uncomfortable and experienced more stigma concerns when they went through screening with their unit and scored above the cutoff on the psychological screening questionnaire. This concern demonstrates how social context can affect perceptions of stigmatization.

Negative perceptions that have been endorsed regarding mental health problems include fear that soldiers' careers would be harmed and fears that coworkers might treat them differently if they admitted to a psychological problem (Britt, 2000). This highlights how influential a soldier's unit and the organization as a whole could be in his or her decision to seek treatment. Soldiers may also be concerned about the general social consequences of seeking treatment and feel uncomfortable with the overall help-seeking process (Ouimette et al., 2011).

Practical barriers involve operational impediments that make it difficult for soldiers to receive treatment (Brit et al., 2008; Hoge et al., 2004). Examples of practical barriers include not knowing where to go, lacking adequate transportation, experiencing difficulty in scheduling an appointment, not having sufficient finances, or not having enough time. These barriers have been endorsed by soldiers and Marines. Some of the most highly endorsed practical barriers include difficulty in getting time off work for treatment and difficulty in scheduling an appointment (Hoge et al., 2004).

Perceptions of barriers become particularly strong for those who meet screening criteria for a psychological disorder (Hoge et al., 2004). Practical barriers may even exacerbate a problem, given that barriers have been associated with depression and PTSD symptoms (Britt et al., 2008). Further, Britt and colleagues (2008) found that perceiving high barriers to care can intensify the relationship between the stress of work overload and depression.

An individual's attitude and beliefs regarding treatment can also be a major barrier to getting mental health treatment (Kim et al., 2011). A person's attitude toward

treatment has been noted to be a strong predictor of treatment seeking intentions and behaviors (Britt et al., 2011). Attitudes toward treatment seeking can be influenced by perceived stigma and beliefs about psychological problems. Attitude toward treatment seeking was of particular interest in the present research study because a person's attitude is likely one of the most proximal influences to a treatment decision. Further, an individual's attitude is likely influenced by those around them, where social support may improve attitudes toward treatment seeking.

Pietrzak and colleagues (2009) specifically studied unit support and beliefs about mental health care in relation to treatment seeking with OEF-OIF veterans. They found that negative beliefs about mental health care and decreased unit support increased perceptions of stigma and barriers to care. Soldiers with negative beliefs about mental health care were less likely to seek counseling, even after adjustments in demographic variables. Further, in studies of civilian populations, attitude toward treatment has also been noted to predict dropout. As previously discussed, Edlund and colleagues (2002) found negative attitudes such as that treatment is ineffective or perceptions of stigma regarding treatment were significant predictors of dropout.

Another attitude that has received recent research attention as a factor that may affect treatment seeking is self-reliance. Visco (2009) found that a major barrier for Air Force personnel experiencing PTSD symptoms involved not feeling a need for professional help. In this sample, the personnel felt they could handle problems themselves or simply did not want to make a big deal out of the symptoms they were experiencing. As an additional concern, some soldiers do not trust mental health

professionals or believe that mental health care does not work (Hoge et al., 2004).

Fikretoglu, Guay, Pedlar, and Brunet (2008) also expressed concern that a high number of service members do not trust military health services.

Important to the present study, some studies have found attitude toward seeking help to mediate the relationship between various psychological and social factors and treatment seeking. Vogel (2005) found that the effects of social stigma, social norms, and social support on intentions to seek professional help were mediated by personal attitudes. The mediating effects of attitudes are important, demonstrating that it is ultimately the decision of the individual to seek treatment, but social support could be influential in affecting attitudes toward treatment. Bamberger (2009) proposed that certain organizational and unit-level norms regarding treatment could influence employee beliefs. He noted through several examples that some organizational norms promote negative attitudes about how to handle mental health problems.

Lastly, characteristics of the individual's experiences are also related to treatment seeking behavior. In studies of Army soldiers and Marines deployed to Iraq, Afghanistan, or other locations, differences in prevalence of mental health problems and percentage of soldiers referred for treatment were noted based on deployment location. Deployments to Iraq resulted in significantly higher rates of mental health disorders than deployments to Afghanistan (Hoge, Auchterlonie, & Milliken, 2006; Hoge et al., 2004). Those different combat locations were associated with varying amounts of combat experiences (Hoge, Auchterlonie, & Milliken, 2006). A deployment to Iraq was specifically associated with greater combat exposure, greater rates of mental health diagnosis and utilization of

services, and as an additional concern higher attrition from military service after deployment (Hoge, Auchterlonie, & Milliken, 2006).

These different rates of mental health issues based on location illustrate the important point that the development of psychological problems can be strongly associated with uncontrollable factors in the environment. It is important for soldiers and their leaders to view mental health problems as caused by the highly stressful work environment rather than a fault of the individual (Britt & McFadden, 2012).

Acknowledging that a mental health problem is not the fault of a soldier, but the result of occupational hazards, may help soldiers to not only seek treatment, but also to remain in treatment. Treatment retention is a major concern for making sure soldiers recover from mental illness; however, some of the same concerns regarding stigma and barriers can harm a soldier's chances of completing treatment.

Treatment Retention

Much of the research thus far has focused on obstacles soldiers may face in seeking treatment for a mental health problem. Less research has examined what actually happens after a soldier initially seeks treatment. Many soldiers who start treatment drop out before completion (Erbes, Curry, & Leskela, 2009; Harpaz-Roten & Rosenheck, 2011). Treatment dropout is when a patient leaves mental health treatment for reasons other than symptom improvement (Edlund et al., 2002). Research addressing treatment maintenance and dropout is lacking. Dropping out of treatment could occur for a variety of reasons, such as not thinking the treatment was working or concerns about neglecting job duties. The reasons and consequences for dropout are not well understood. Further

research attention should be directed toward understanding treatment dropout to help soldiers successfully recover from mental health problems.

Dropping out of treatment is a serious obstacle to effective treatment for a mental health problem (Wierzbicki & Pekarik, 1993). A few studies to date have looked at therapy retention and dropout rates for military personnel, showing dropout to be a significant problem, especially in the current era. Studies have reported a higher dropout rate for Operation Enduring Freedom (OEF) and Operation Iraqi Freedom (OIF) veterans as compared to past veterans from the Vietnam era. Harpaz-Roten and Rosenheck (2011) reported that less than half of veterans continue treatment for more than one year. Specifically, they found that only 46% of Vietnam-era veterans were in therapy for more than one year and only 37.6% of OIF-OEF veterans were in therapy over one year. Erbes, Curry, and Leskela (2009) also replicated this finding of higher dropout rates for OEF-OIF veterans compared to those from Vietnam.

Remaining in treatment for the recommended duration is obviously important for an individual to successfully recover from a mental health disorder. Foa, Keane, and Friedman (2000) noted in their guide for traumatic stress studies that it may take a minimum of 9 to 15 sessions to have any indications of recovery. Harpaz-Roten and Rosenheck's (2011) study reported an average of only 8 mental health visits were completed for OIF-OEF veterans in treatment for PTSD. Because individuals differ greatly in personal attributes and conditions, it is difficult to determine an exact number of visits necessary for recovery; however, the available evidence suggests that the average number of visits soldiers are attending is likely insufficient.

The importance of remaining in treatment for mental health disorders has been demonstrated specifically in military samples. In a study of veteran soldiers with serious mental illnesses such as bipolar disorder or schizophrenia, researchers tried to contact those patients who had previously dropped out of treatment. The mortality rate of those who returned to treatment after previously dropping out was nearly six times less than for those who choose not to return (Davis et al., 2012). This finding shows a more dramatic, but obvious example of the need to retain soldiers in treatment.

Research has begun to show that dropout from treatment is a serious problem, but less is known about why soldiers may drop out. Because of the lack of evidence in the particular domain of military research, outside research on psychological therapy in general must be considered. A meta-analysis of psychotherapy dropout from the general population found demographic variables that influenced dropout rates. The authors reported higher dropout rates for individuals of a minority racial status, those who were less educated, and those in lower income groups (Wierzbicki & Pekarik, 1993).

Fenger, Mortensen, Poulsen, and Lau (2011) also confirmed the predictive value of demographic variables such as age and education. In addition, this study noted that those without sick leave were more likely to not show up for treatment appointments. This highlights an example of the interaction between work and completing mental health treatment, where the authors suggested that a more flexible sick leave allows patients to better comply with treatment. Organizationally-related constraints could also be a critical challenge for military personnel to have adequate time off work to attend treatment sessions.

Studies have also found characteristics of the disorder to affect treatment retention. Derisley and Reynolds (2000) found that high initial symptom severity and low recognition that there was a problem was predictive of treatment dropout. Fenger, Mortensen, Poulsen, and Lau (2011) interestingly noted that patients in their study who were rated as either slightly impaired or severely impaired were most likely to miss treatment visits. The authors proposed that this relationship exists because those with mild symptoms may feel their problems are solved before treatment is over, and those with severe symptoms may have insufficient support or may feel too sick to show up.

A final predictor of dropout that has been identified by researchers involves the patient's attitude and perceptions of stigma. Edlund and colleagues (2002) found that those with negative attitudes toward treatment were more likely to drop out. Such attitudes included thinking treatment was relatively ineffective or feeling uncomfortable about seeking help from a mental health provider. These concerns about negative attitudes and especially stigma should be highly relevant in the military for predicting dropout as well.

An additional interest in this study is whether mandating that soldiers attend treatment would result in positive treatment outcomes. While command referrals have not received attention in the military yet, some research has addressed how court mandated patients respond to mental health treatment. For example, Buttell and Pike (2002) noted many mixed findings in the past literature on court-referred mental health patients, specifically those referred because of domestic violence. In their study of court-mandated patients required to enter a batterer intervention program, Buttell and Pike (2002) found

the dropout rate for their sample to be around 27.4%, which is slightly higher than general population estimates (e.g., 19% in Edlund et al., (2002) sample) but slightly lower than those rates cited for military veterans. Interestingly, this study found no demographic or psychological variables that differentiated those who remained in treatment from those who dropped out. The lack of differentiation shows that those required to attend treatment may respond quite differently from traditional voluntary samples, where at least demographic variables are usually strong predictors of dropout.

The effect of a mandatory referral needs considerably more research attention. Commanders referring soldiers to treatment could be a powerful tool for those who do not choose to enter treatment themselves, but could benefit from professional help for a mental health problem. Commanders could also presumably require soldiers to continue in treatment, but this raises a concern that soldiers may feel resentment from losing control of this process. As theories of predicting behavior have demonstrated, having control over a decision is a major predictor of whether someone engages in a behavior (Ajzen, 1985; Britt et al., 2011). It is worth determining if command referring a soldier to treatment, potentially taking away the perceptions of control in the decision, prompts negative associations with treatment and subsequent dropout, or if the referral is worth this risk to get someone into treatment.

Many of these studies examining treatment dropout have highlighted characteristics of the individual such as demographics and attitudes as predictors of dropout; however, this leaves less room for viable intervention to increase therapy retention. What needs to be further investigated is how modifiable organizational factors

affect therapy retention for soldiers. Because of the strength and prominence of military culture, the environment and support from cultural agents could have a powerful effect on soldiers remaining in treatment.

Influence of Social Support on Treatment Seeking and Retention

The actions and attitudes of members of an individual's social network can be important if he or she is experiencing high amounts of stress or mental health symptoms. Particularly in military settings social influences could be quite powerful because of the strong culture and aggressive implementation of military values (Coll, Weiss, & Yarvis, 2011). Langston, Gould, and Greenberg (2007) pointed out the complexity of military culture and the challenging dynamics involved in trying to balance between promoting fighting efficiency and promoting a psychologically safe and open environment. They proposed that the culture and social norms of the military may be the real "patient" that needs more attention.

Important others, such as leaders, co-workers, or family members can have a positive influence by providing support for treatment or could have negative influences by directly or indirectly discouraging the person from seeking treatment. The Theory of Planned Behavior (Ajzen, 1989) provides some insight on how social factors can affect treatment seeking behavior. The Theory of Planned Behavior has been successfully applied in military settings, such as with predicting withdrawal from military recruitment (Griepentrog et al., 2012) and job pursuit behaviors (Schreurs et al., 2009). Britt and colleagues (2011) applied the Theory of Planned Behavior to understanding treatment seeking in the military. Applied to treatment seeking, the Theory of Planned Behavior

predicts that if an individual has a positive attitude toward treatment seeking, others who are important to the individual support seeking treatment, and the individual believes he or she has control over seeking treatment, the person will be more likely to get needed treatment (Britt et al., 2011).

Britt and colleagues (2011) investigated the effects of social norms by asking Reserve Component veterans if people who were important to them would be supportive of them getting treatment if they had a psychological problem. Subjective norms were a significant predictor of treatment seeking, where more positive norms were related to an increased likelihood of seeking treatment. Subjective norms were also significantly related to a service member's overall attitude toward treatment. Attitude toward treatment seeking was a unique predictor while subjective norms and perceived control were not. In their subjective norm ratings, veterans reported overall positive norms towards treatment seeking. In qualitative results, no veterans mentioned a lack of support from friends/family as a reason for not getting treatment.

Clark-Hitt (2012) also used the Theory of Planned Behavior framework to predict when others would encourage someone to seek mental health treatment. This study found that subjective norms were significant predictors of whether someone would encourage others to seek help. The researcher also noted that there was a discrepancy between actual norms and the perceived norm in the sample, where 96% of participants approved of encouraging others to seek help, but they perceived only 70% of others would approve.

Social influences and support may be important to initiating treatment as well as maintaining treatment. The Stages of Change model established by Prochaska and

DiClemente (1982) has been applied to health-related behaviors such as smoking cessation, weight loss, or drug abuse. This model proposes that individuals go through different stages in working to change a health behavior. The model involves five stages of progression through changing a behavior. A relapse stage is also noted where an individual might go back to a previous behavior and have to begin the cycle again (Prochaska, DiClemente, & Norcross, 1992).

The first stage in the model is “pre-contemplation” where the individual does not think about or acknowledge the problem. There is no intention to change the behavior in the near future. Next, “contemplation” is when the person recognizes the problem and considers getting help. The individual is serious about changing, but has not made a total commitment. Third, “preparation” is when the person is ready to change. He or she may be taking small steps and feel ready to make real progress in the near future. “Action” is when the person is actively working on fixing the problem by modifying behavior or the situation to overcome the problem. Lastly, “maintenance” is the final stage where a person works to prevent relapse and maintain the benefits of change (Prochaska & DiClemente, 1982; Prochaska, DiClemente, & Norcross, 1992).

The Stages of Change model could be useful in understanding the process of seeking mental health treatment as well as maintaining progress throughout treatment. Soldiers with psychological symptoms must recognize the problem, take action, actively work on the problem, and maintain their progress. The theory implies that real change requires individual commitment and a positive view of change from the individual. Thus, it is ultimately the attitude of an individual that should promote real change; however,

various social forces could also either help or hinder progress of treatment in these stages. Different types of support may as well be most appropriate for individuals in different stages in the decision to seek treatment. For example, informational support would seem important for seeking treatment while instrumental and emotional support could be more critical in maintaining treatment. Encouraging social support and avoiding negative attitudes of others would be important in all of these stages.

As studied with various health behaviors, helping relationships have been noted as important interventions involved in the process of change (Prochaska, DiClemente, & Norcross, 1992). Prochaska et al., (1992) defined helping relationships as having an open and trusting relationship with someone who cares. Helping relationships were particularly emphasized in action and maintenance phases of change, where individuals were actively working on coping with a problem and needed support to maintain progress. For soldiers, treatment may involve bringing up psychologically uncomfortable issues, so support could be critical for encouraging individuals to continue in treatment despite feelings of discomfort.

Important others being actively involved in supporting and helping the individual undergoing treatment may play a crucial role in the success of treatment. Organizational agents such as leaders and peers, as well as family and friends, can be helpful in the treatment process by being supportive and encouraging to a soldier in treatment, especially when treatment may feel distressful. As discussed in the review of social support, the source of support and type of support could be influential for outcomes. Different sources that could be critical to a soldier's decision to get treatment are family

and friends, leaders, and unit members. Research examining the influence of each of these different support sources is reviewed in the following sections.

Support from family and friends for treatment seeking. Studies have shown family members to be an important influence to the mental health of soldiers. A study of veterans from Iraq and Afghanistan found that veterans who were married or who were highly satisfied with their social networks were less likely to engage in suicidal thoughts or behaviors (Jakupcak et al., 2010). However, the authors noted that the protective factors were weaker for those with PTSD. Another study by Ouimette and colleagues (2011) of veterans with PTSD had an interesting finding that may help to explain this caveat. In a survey of veterans who had been diagnosed with PTSD, stigma-related concerns, such as discomfort with help seeking and concerns about social consequences, were noted as the highest barrier to seeking treatment. Interestingly, being married was associated with greater concerns about negative social consequences and discomfort with seeking treatment in veterans who had been diagnosed with PTSD (Ouimette et al., 2011). This could mean that those with a spouse, someone very close to them, were particularly concerned with the opinions of important others. The findings of these two studies are concerning with implications that when an individual has a mental illness and social support matters a lot, the support may not be as influential in making the person comfortable with seeking treatment or buffering dangerous suicidal thoughts.

Results from a study by Carney and Kivlahan (1995) indicated that people engaging in treatment were more likely to be living with family or friends prior to seeking treatment than those who were in pre-contemplation stages of treatment seeking

when the problem is not acknowledged. The authors suggested that individuals in treatment either experienced more social pressure to engage in treatment or greater social involvement in helping the person to change a behavior. A limitation to these studies, however, is that they are predominantly considering the presence of a particular relationship, and not necessarily the quality of the relationship or specific supportive behaviors.

Another important point is that relationships are helpful to seeking treatment, but relationships may also suffer when an individual has a psychological problem. In a study of National Guard soldiers, PTSD symptoms were associated with relationship concerns. In this study, the authors encouraged the use of family-based interventions that were tailored to address post-deployment mental health and family-related problems that coincide (Khaylis et al., 2011). Incorporating family involvement ensures that relationships are healthy and can be supportive of treatment seeking and maintaining psychological health.

Another possibility is that relationships with close others such as family and friends may serve as an alternative to seeing a mental health provider. In the military, this could be possible with unit members and leadership as well, but seems more relevant to discuss in relation to family and friends who likely have the closest relationship with soldiers (although this has not been empirically determined). Gottlieb (1976) reviewed research on informal networks and help-seeking. His review examined general populations and seeking help for both medical and psychological problems, but also holds utility for understanding how those close to an individual may influence decisions

to seek help for a problem. First, he noted that close family, friends, and community relationships may either substitute professional care or may be a gateway to professional care. Family and friends could be critical when relationships begin to suffer because of a psychological problem to force the person to recognize the problem and seek treatment.

Another point in the article was that not everyone close to an individual is equal in influence. Gottlieb (1976) emphasized that more research is needed to determine which informal agents are most influential in getting someone to seek professional help. He noted that not all sources have the same contact with the person or the same knowledge about the professional health world. Gottlieb's article generally focused on family and friends; however, given the cohesiveness of military units, unit members and unit leaders could be comparably influential for treatment decisions. Organizational agents may also be in a better position to be informed and connected with resources available to soldiers to get treatment for a problem.

To partially differentiate this issue of whether informal networks may substitute for getting professional treatment, the present study assessed support specifically for seeking mental health treatment. Survey items asked respondents if important others would encourage them to seek treatment for a psychological problem. Addressing social support in this manner should demonstrate specific support for treatment rather than overall support that could potentially substitute for treatment; however, informal networks as treatment alternatives should be considered in future research.

Support from leaders. Leaders may also be influential to treatment decisions, particularly in an organizational culture with strong emphasis on authority and chain of

command. Leadership is important to a wide variety of organizational processes and outcomes such as motivation, performance, and well-being. Important in the military setting, leadership can influence soldier health and adaptation to stressful environments.

Leaders can affect the relationship between stress and health outcomes by influencing the stressors that soldiers experience or by acting as a buffer between stressors and health outcomes (Britt et al., 2004). For example, positive leaders may help buffer the effects of combat exposure on the development of mental health problems (Jones et al., 2012). Additionally, leaders can exert influence not only to their subordinates directly, but also through making changes in the work environment which affect subordinate health and performance (Britt et al., 2004).

Britt and colleagues (2004) proposed that leaders who provide structure and support for their subordinates can decrease the level of stress a soldier experiences. By providing a structured, supportive environment, leaders can reduce interpersonal conflicts, reduce ambiguity in the job, and make soldiers feel that their tasks are significant. Support from leaders may not only reduce experienced stress, but also lessen the negative health and relationship consequences of experiencing some stressors. The effect of leader support may also be dependent on the closeness of the leader. Commissioned and warrant officers are of higher rank and typically have less direct contact with subordinates. NCOs are more direct unit leaders who are essential in the daily conduct of Army operations (Department of the Army, 2006). Britt et al., (2012) supported NCO behaviors as stronger predictors of stigma and practical barriers than officer behaviors. These results were consistent with previous thoughts that NCOs have

the greatest influence on personnel because of their immediate supervisory role (Knapp, McCloy, & Haffner, 2004).

Little research has attended to how leaders specifically influence treatment seeking. Britt, et al., (2012) found positive and negative behaviors of noncommissioned officers (NCOs) and officers to be predictive of overall stigma and barriers to mental health care. Negative leader behaviors were more strongly related to stigma while positive leader behaviors were more strongly related to fewer practical barriers. Reducing practical barriers is an example of providing instrumental support for soldiers. Instrumental support from leaders, such as allowing time off work for soldiers to attend treatment, could be critical both to influencing soldiers to get treatment and preventing treatment dropout.

Leaders have also been discussed as influential to the creation and nature of the climate of a unit (Britt & McFadden, 2011; Zohar, 2010); therefore, leaders may be highly significant in creating a specific climate toward treatment seeking in a unit. Creating a positive climate and positive norms toward treatment would likely enhance individual attitudes toward treatment, making seeking treatment more likely. The influence of the leader and unit may together be extremely influential. Specific influences of unit members will be discussed further in relation to seeking treatment.

Support from unit. Along with the leader, unit members can also affect an individual's attitudes regarding mental health treatment. The unit is a particularly important influence that has not received adequate research attention. In the military environment, there is a substantial emphasis on unit cohesion and formation of trusting

bonds between team members (Coll, Weiss, & Yarvis, 2011). These strong bonds and mutual-trust are essential for mission success; however, it may feel even more distressing for an individual to have to seek treatment from someone outside their unit when much of their training has taught them to intensely rely on the unit for support (Langston, Gould, & Greenberg, 2007). Relating back to Gottlieb's (1976) ideas, close networks, such as the unit, could potentially become a substitute for professional treatment.

Less research has been conducted on how fellow unit members can affect a soldier's attitude toward treatment or decisions to seek treatment, but current research suggests potential positive influence. The cohesiveness of the unit seems to play a role in the stigma of mental disorders and experience of stress. Having high levels of unit cohesion can help to reduce perceived stress (Mitchell et al., 2011). Related to lower perceived stress, greater unit cohesion and morale have also been found to be associated with lower levels of levels of mental disorders (Jones et al., 2012). Wright and colleagues (2009) found that together, positive leadership and high levels of unit cohesion are related to reductions in perceived stigma and barriers to mental health treatment. More specific research on how the unit can uniquely affect treatment seeking and success in treatment is needed.

CHAPTER FIVE

FUNCTIONAL IMPAIRMENT AS A MODERATOR OF THE RELATIONSHIPS BETWEEN SOCIAL SUPPORT, TREATMENT SEEKING, AND RETENTION

Thus far, attention has been given to organizational barriers and social agents that influence treatment seeking. Social support has been discussed as important for seeking treatment and remaining in treatment. It is important to remember that relationships involve an interaction between the provider and recipient of social support.

Characteristics of the recipient likely influence how social support is perceived and the subsequent outcomes of that support. Bamberger (2009) noted individual factors that affect whether or not an individual seeks help in the workplace, including gender, age, personality characteristics, and problem characteristics. The present study examined how the level of functional impairment the soldier is experiencing may moderate the relationships between social support, attitudes toward treatment, and treatment seeking and retention.

Functional Impairment

Researchers and practitioners have noted that the more symptoms begin to interfere with daily life, the more likely one is to seek treatment for a mental health problem. In the present study, the degree of symptom interference was conceptualized as functional impairment. Functional impairment should provide a more accurate and direct assessment of the degree to which a mental health problem interferes with a soldier's daily life by asking the soldier to reflect on impairment to major domains such as family functioning, social functioning, and work functioning (Sheehan, 1996). The following

review will include research that assesses subjective distress, problem severity, symptom interference, and impairment. These concepts are assumed to be somewhat distinct but highly related. Functional impairment, as assessed in the present study, is assumed to be a more specific indicator of the severity of the problem, where a problem that is severe is expected to result in greater impairment.

In a study using a non-military sample, researchers found that subjective distress was strongly and consistently associated with seeking treatment across many syndromes including depression, bipolar disorder, anxiety, panic, neurasthenia and insomnia (Angst et al., 2010). The same trend applies in the military, where soldiers may put off treatment until a problem significantly interferes with daily life. For example, Britt and colleagues (2011) found that the percentage of individuals with a psychological problem who sought treatment increased as the problem severity increased.

Fikretoglu, Guay, Pedlar, and Brunet (2008) noted several characteristics of the specific disorder that can predict treatment seeking. They found that more trauma exposure, high symptom interference, and comorbid disorders significantly predicted treatment seeking for PTSD. These examples all show that a more severe problem may create more distress in daily life that increases the likelihood that a soldier will get help from a professional.

A concern in the military context is that perceived stigma may be higher when soldiers are experiencing symptoms. A study of veterans found that those with the most symptoms were the ones who perceived the most barriers (Ouimette et al., 2011). Hoge et al., (2004) also found higher perceptions of barriers for those who met the criteria for a

mental health disorder compared to those who did not. Presumably, the barriers and stigma may feel more real as a person actually encounters symptoms. When soldiers are experiencing symptoms, those close to the soldier should be responsive with support for the soldier to seek treatment.

Research has suggested that the nature of the problem, the recognition of a need for treatment, and positive attitudes toward seeking help likely affect one another in decisions to seek help (Bamberger, 2009). Bamberger (2009) noted that no studies have directly tested the interactive effects of problem characteristics and attitudes toward seeking professional help, but this is a likely relationship that should be examined. The present study sought to partially address this question by investigating how functional impairment may moderate the effects of social support and attitudes on treatment seeking.

In Bamberger's (2009) review on help-seeking in the workplace, the severity of a problem was noted to potentially affect help-seeking in two ways. First, as problem severity increases, seeking help could increase, where high discomfort and interference with daily life prompt individuals to get help. This linear relationship was noted as particularly common for seeking treatment for psychological problems. Alternatively, Bamberger noted that some problems could cue feelings of limited ability and low self-esteem; therefore, seeking treatment would further degrade self-perceptions. Both of these reactions are realistic possibilities, so perhaps the type of reaction interacts with other variables, such as social support.

Bamberger (2009) also noted that organizational or work unit norms can create references that cue individuals as to whether a behavior is more or less acceptable. In a military context, it could be that soldiers have a negative reference regarding seeking treatment when a problem is causing moderate or low impairment because that could be related to perceptions that they are just trying to get out of work or cannot handle the job. However, soldiers may feel that it is more acceptable to seek treatment when they are obviously suffering from a problem with high impairment. Therefore, it may be that when a problem becomes severe with high functional impairment, soldiers will likely seek treatment regardless of whether or not social support is available. If a problem is low in impairment, social support may also be weakly related to treatment seeking because the soldier and the support providers may not see a need for professional treatment. In this case, symptoms may not seem severe enough to warrant treatment or the symptoms may not even be noticeable to others in order to provide any support. A problem with moderate levels of interference may illicit a reaction where negative feelings of self-worth increase if an individual thinks he or she may need treatment. In this case of a problem moderate in impairment, soldiers may need social support to improve their attitude toward treatment and encourage treatment seeking. Such an interaction between workplace and non-work support and functional impairment was tested in the present study.

Functional impairment may also affect treatment retention outcomes. Studies of the general population have noted that high problem severity, as well as low problem severity, can be associated with dropping out of treatment or not showing up to visits

(Derisley & Reynolds, 2000; Fenger et al., 2011). As previously discussed, problems low in impairment may seem less worthy of treatment; whereas severe problems may be overwhelming to deal with, resulting in a higher likelihood of dropout. Moderate problems may result in the lowest likelihood of dropout because they cause enough impairment to create a need for treatment, but are not so severe that treatment is overwhelming. The present study examined this potential non-linear main effect of functional impairment on treatment dropout and how social support may reduce the likelihood of dropout for soldiers with varying levels of impairment. It was expected that social support would be particularly influential in reducing dropout for soldiers with high or low levels of impairment.

CHAPTER SIX

HYPOTHESES AND RATIONALE

The previous literature review has addressed research on social support, leadership, and influences on treatment seeking and treatment retention. The present study integrated these topics to determine how different sources of social support and different supportive behaviors from leaders predict soldier decisions to seek treatment and treatment retention.

The present study had three major sets of hypotheses. The first set of hypotheses concerned what sources of social support influence a soldier experiencing a mental health problem to get treatment. These relationships are depicted in Figure 1. The three sources of support considered were family and friends, fellow unit members, and leaders. These sources were investigated independently.

Past research has shown in a civilian context that social support can indirectly influence treatment seeking intentions through improving an individual's attitude toward treatment (Vogel et al., 2005). Further, in a military sample, perceived social norms were found to be significantly correlated with an individual's attitude toward treatment, and attitude toward treatment was found to be a unique predictor of treatment seeking (Britt et al., 2011). It is logical that social support should be a component of positive social norms toward treatment seeking; therefore, it is likely that social support will similarly be related to an individual's attitude toward treatment and further affect decisions to seek treatment.

In the present study, it was hypothesized that social support would increase the likelihood of seeking treatment through improving soldiers' attitudes toward seeking mental health treatment. All sources of support should improve soldier attitudes toward seeking treatment and increase the subsequent likelihood of seeking treatment. Concerning the relative importance of sources, I predicted that support from family and friends would have the greatest influence on improving attitudes and treatment seeking. Those closest to the individual should be the first to acknowledge symptoms and symptom interference (e.g., Gottleib, 1976) and should therefore be in the best position to encourage the soldier to get treatment.

Hypothesis 1a: The three sources of support will have unique influences on the soldier attitude and treatment seeking. Support from family and friends will account for the greatest amount of unique variance in the soldier's attitude toward treatment and likelihood of seeking treatment.

Hypothesis 1b: The relationship between social support and treatment seeking will be partially mediated by the overall attitude toward getting mental health treatment, where social support improves the soldier's attitude toward getting treatment, which results in a greater likelihood of seeking treatment.

Seeking help for a problem involves an active social exchange; therefore, the effects of social support on treatment seeking may depend on recipient characteristics. The present study considered how functional impairment may moderate the relationship between support and treatment seeking. As individuals experience more impairment, two possible reactions have been discussed. An individual could be more motivated to get

treatment to reduce symptoms or the person may be unmotivated to get treatment to avoid further feelings of negative self-worth.

In military research, problem severity has been associated with a higher likelihood of getting treatment (e.g., Fikretoglu et al., 2008). In the case of psychological problems, it is likely that as interference with life increases, an individual will be more motivated to seek treatment; therefore, problems causing high impairment should warrant attention on their own and social support may be less influential in the decision to seek treatment.

When problems are low in impairment, it is may be less likely that individuals will seek treatment because they do not think the problem warrants professional help. Further, important others may not be aware of symptoms that cause low impairment, so social support may not be offered. When psychological problems have moderate impairment, the problem may illicit the alternative reaction discussed by Bamberger (2009) where a soldier considering help may experience negative feelings in regard to self-esteem and self-worth. For example, a soldier may think a problem is not severe enough to get treatment and choose not to address it because doing so would make him or her feel weak. Further, Bamberger (2009) noted that if a problem is considered widespread, an individual may have difficulty realizing when an issue is problematic versus normal within the group. Such an issue could arise in military settings if soldiers have a mentality that everyone has been through combat and has issues because of it. A positive attitude toward treatment and social support may be necessary for soldiers to seek treatment for a moderate problem. The present study examined how functional impairment influenced

both the direct relationship between support and treatment seeking as well as the indirect relationship through attitude toward treatment seeking.

Hypothesis 2a: The direct relationship between social support and treatment seeking will be moderated by functional impairment. Social support will have the strongest relationship with treatment seeking for those with a problem moderate in impairment.

Hypothesis 2b: The mediated relationship of social support influencing treatment seeking through improving the attitude toward treatment seeking will depend on functional impairment. The mediated effect of social support through attitude toward seeking treatment on treatment seeking will be strongest for those experiencing moderate impairment.

The second set of hypotheses concerned only those soldiers who had sought treatment for a mental health problem. These hypotheses examined how encouragement to get treatment from different sources of support affected the decision to seek treatment and treatment retention. These relationships are depicted in Figure 2. First, mean differences were tested to determine what source was rated highest as influential to the soldier's treatment decision. Because of the rationale provided previously, I proposed that those closest to the soldier, family members or a spouse, would have the strongest influence on treatment seeking.

Hypothesis 3: Family members or spouses will be rated by soldiers who sought treatment as the largest influence on seeking treatment.

Social support is expected to remain important throughout the treatment process. Factors such as individual attitudes toward treatment and perceptions of stigma have been noted as predictors of treatment dropout (Edlund et al., 2002). A person's attitude toward treatment, as previously discussed, may be highly influenced by support (or a lack of support) from important others. The nature of the available survey data made it difficult to accurately capture the individual's attitude toward treatment prior to dropout, so only the direct effects of social support were examined in the present study. Similar to the previous hypotheses discussed, I proposed that social support from all sources would encourage soldiers to remain in treatment. Comparing sources of support, I hypothesized that support from those closest to the soldier would be most influential in helping him or her remain in treatment.

Hypothesis 4a: For soldiers who had previously sought treatment, high social support for getting treatment will be associated with a lesser likelihood of dropping out of treatment.

Hypothesis 4b: The different sources of support will have unique effects on the likelihood of treatment dropout. Support from family members and spouses will account for the greatest amount of variance in dropout.

I proposed that the degree of impairment experienced by the soldier would affect the relationship between support and treatment retention. Fenger and colleagues (2011) noted that not showing up to treatment was highest when problems were low or high in severity, presumably because the problem did not seem significant or the problem was exceptionally difficult to handle. With this evidence, I predicted that there would

similarly be a non-linear relationship between functional impairment and dropout rates in the present sample. Social support would then be most influential in reducing dropout for those with problems on either extreme in impairment.

Hypothesis 5a: Functional impairment will have a non-linear main effect on dropout.

Hypothesis 5b: Functional impairment will moderate the relationship between social support and dropout. High social support will have the strongest relationship with dropout for those with high or low impairment.

The third set of hypotheses concerned how different forms of providing support may differentially affect what soldiers rate as influencing treatment decisions and treatment retention. These hypotheses, which pertained only to soldiers who reported seeking treatment, determined how different supportive leader behaviors (informational, instrumental, emotional, and authoritative) were related to treatment retention. Little research has addressed the relative effectiveness of these different behaviors, so predictions on what type of support would be most influential were limited.

Mean differences were first examined to determine what leader behaviors were most highly endorsed as influential to a soldier's decision to seek treatment. Past research has noted that those closest to the individual are crucial in providing emotional support. I hypothesized that individuals would seek emotional support from those close others (family, spouse) first and support of a more practical nature would be most important from leaders. Therefore, I proposed that instrumental support from leaders would have the largest influence on a soldier's treatment decision.

Hypothesis 6: Instrumental support will be the most highly endorsed leader behavior that influenced soldiers to seek treatment.

In relation to treatment retention, I proposed that leader behaviors of providing instrumental, informational, and emotional support would result in a lower likelihood of dropout. Job duties and inadequate time to get treatment have been specifically related to dropout in past research (Fenger et al., 2011). Such organizational constraints may be particularly relevant for military personnel, where soldiers need leaders to allow time off work to attend treatment sessions for as long as necessary; therefore, I expected that low reports of instrumental support (e.g., leaders allowing time for treatment) would be associated with a greater likelihood of dropout. Additionally, I proposed that those who were highly influenced to seek treatment by a command referral would be more likely to drop out because they did not possess control in the decision to get treatment.

Hypothesis 7a: Leader supportive behaviors will be associated with a lower likelihood of dropout.

Hypothesis 7b: Instrumental support will have the strongest relationship with dropout.

Hypothesis 7c: Authoritative support through command referral to treatment will be associated with a higher likelihood of dropout.

These relationships were again expected to be moderated by the degree of functional impairment, where support may be more crucial for those with a problem either very high or low in impairment to encourage retention. Leaders may need to show

higher levels of supportive behaviors to help those susceptible to dropout to remain in treatment.

Hypothesis 8: Functional impairment will moderate the relationship between leader support and dropout. Leader support will be most influential for reducing the likelihood of dropout for those with high or low impairment.

CHAPTER SEVEN

METHOD

The present study used survey data collected at two time points. Cross-sectional analyses were conducted using the larger time 1 sample. Longitudinal analyses included the matched sample of soldiers completing the survey at time 1 and time 2.

Participants

Time 1. A total of 1,911 U.S. Army soldiers were surveyed on their base. Of those soldiers, 90% ($N = 1,725$) provided consent for their responses to be used for research purposes. Analyses were conducted only with responses from soldiers who provided consent. The majority of the sample was male (90.1%) and white (62.7%). Most soldiers were between the ages of 20 and 24 (45.6%) or 25 and 29 (27.1%). Soldiers in the sample had been in the military on average for 5 years ($SD = 5.6$). Most soldiers surveyed were lower in ranking, namely E1-E4 (69.2%) or E5-E6 (20.6%).

For the present research questions, only those who either reported experiencing a current problem or who met screening criteria for PTSD, depression, or an alcohol problem were included in the analyses ($N = 718$). The demographics of the subsample of those with a mental health problem were similar to the total sample. Of those who reported a problem or met screening criteria, the majority were male (89.7%) and white (65.6%). Most were between the ages of 20 and 24 (45.4%) or 25 and 29 (27.3%). Average military tenure was 5.4 years ($SD = 5.6$). The majority of those with a problem were lower in rank, E1-E4 (70%) or E5-E6 (22.4%).

Time 2. A total of 1,652 Army soldiers were surveyed. Of those soldiers, 80.6% ($N = 1,324$) provided consent for their responses to be used for research purposes. Again, analyses only used data from those participants who provided consent. The time 2 sample was demographically similar to the time 1 sample. The majority of the sample was again male (93%) and white (63.5%). Most soldiers were either 20 to 24 (43.4%) or 25 to 29 (27.2%) years old. Soldiers had been in the military an average of 5.2 years ($SD = 5.7$). Most were lower in ranking, either E1-E4 (64.2%) or E5-E6 (23.8%).

Matched sample. On each time 1 and time 2 survey, participants were asked to provide the last five digits of their social security number, as well as the state in which they were in on September 11, 2001. These questions were chosen to provide anonymous, but memorable, items to create a unique code for matching data from participants at time 1 and time 2. A total of 485 soldiers completed both the time 1 and time 2 survey, and provided consent for their responses to be used for research purposes at both time points. Like the time 1 and time 2 samples, the matched sample was also predominantly male (92.9%) and white (68.4%). Most soldiers were between the ages of 20 and 24 (48.4%) or 25 and 29 (27.8%). Most soldiers were either E1-E4 (70%) or E5-E6 (23.1%) in rank. Average tenure in the military was 4.8 years ($SD = 5.3$).

In the matched sample, 235 either self-reported that they were currently experiencing a problem or met criteria for PTSD, depression, or an alcohol problem at either time point. The subsample of those with a problem was mostly male (93.1%) and white (71.6%). Most soldiers were between the ages of 20 and 24 (49.8%) or 25 and 29

(24.2%). Average military tenure was 4.8 years ($SD = 5.7$). Most soldiers were either E1-E4 (73.1%) or E5-E6 (20.4%) in rank.

Procedure

Time 1. A survey designed to understand soldier perceptions and utilization of mental health services was administered to soldiers 9 months following the Brigade's deployment. The survey was based on previous studies which conducted focus groups with soldiers and interviews with soldiers who had previously sought treatment for a mental health problem (Zinzow et al., 2013). The survey assessment took place over five consecutive days, consisting of 29 total sessions and a maximum of 200 soldiers in each session. Soldiers arrived to a classroom facility on the Army base with their unit at times arranged with unit leadership to complete the survey.

Two primary investigators and two graduate students were present at all sessions to administer the survey. An investigator first briefed the soldiers on the purpose of the study and soldiers were given informed consent documents. An ombudsman was present at each session to answer questions soldiers had regarding their participation.

Time 2. The same survey, with slight modifications, was administered to members of the same Brigade five months following the time 1 survey. The survey was administered as part of the pre-deployment process on the base. One primary investigator and one graduate student were present for sessions of the pre-deployment processing over the course of four weeks. For each day of data collection, a principle investigator from the research team briefed soldiers at the beginning of the day. The investigator reviewed the purpose of the study, and informed consent documents were provided for additional

information. An ombudsman was present during this time to answer any questions soldiers may have had regarding their participation.

After the briefing, soldiers were given the survey to complete before leaving the processing center that day. They had the option to either complete the survey while waiting at other stations, or come to the research team's designated station and use the available space to complete the survey.

Measures

Sources of Support for Treatment Seeking was assessed with three items which were examined independently as predictors. Past research has established that single item measures can demonstrate comparable validity to that of multiple item measures (Bergkvist, & Rossiter, 2007). The three items were: "Friends and family would encourage me to go get mental health treatment if I needed it", "My leaders would encourage me to go get treatment if I needed it", and "My fellow unit members would encourage me to go get treatment if I needed it". Participants were asked to rate the extent to which they agreed with each statement with response options on a five point scale ranging from strongly disagree (1) to strongly agree (5). These items were included on the time 1 and time 2 surveys.

Influences on Treatment Seeking assessed the behaviors that influenced those who decided to seek treatment. Support from different sources and different leader behaviors that could have influenced the treatment decision were compared. Participants were asked to indicate the extent to which a series of factors influenced them to seek treatment with response options ranging from not at all (1) to very much (5). Two items reflecting

different sources were “My spouse/family encouraged me” and “A fellow soldier or friend encouraged me”. Items reflecting different supportive leader behaviors included “My leaders allowed me time off work to attend treatment” or “My leaders gave me information on where to go for treatment”. These items will be examined independently to determine how certain sources and certain leader behaviors may uniquely predict. These items were included on the time 1 and time 2 surveys. See Appendix A for all influences to treatment items.

Attitude toward Treatment Seeking was assessed using one overall attitude item. A one item measure of overall attitude toward treatment seeking has been used in past research (e.g., Britt et al., 2011). This item asked, “Overall, what is your current attitude toward seeking treatment from a mental health professional were you to develop a problem?” Response options were on a 7-point scale ranging from very negative (1) to very positive (7). Attitude was assessed at time 1 and time 2.

Functional Impairment was assessed for those participants who reported experiencing a current problem or who responded to the PTSD, depression, or alcohol items. Three items adapted from Sheehan et al. (1996) were used to assess functional impairment. Participants were asked in reference to the past four weeks, how much stress or emotional problems had: limited your ability to do your primary military job, disrupted your social life, and disrupted your family life/home responsibilities. Response options were on a 5-point scale ranging from not at all (1) to extremely (5). Impairment was assessed on the time 1 and time 2 surveys.

Treatment Seeking was assessed in two ways at both time periods. First, participants were asked if they had received mental health services for a problem from any of nine sources in the past 12 months. Options included several on-base behavioral health clinics, primary care providers, mental health providers at a civilian facility, spiritual advisors, or other sources (see Appendix B for specific locations). Response options were yes or no. An additional item asked participants how many visits for mental health services they had attended in the past 12 months. Response options were 0, 1-2, 3-7, 8-12, and more than 12. Participants were considered as treatment-seeking if they attended at least one mental health visit and/or reported at seeking treatment at least one location.

Treatment Retention. For those participants who had reported receiving treatment in the past 12 months, they were also asked “Did you start receiving mental health treatment in the past 12 months, but stopped or dropped out before completing the treatment?” with a response option of yes or no.

Self-Reported Current Problem. All participants were asked to indicate if they were currently experiencing a stress, emotional, alcohol, or family problem. Response options were yes or no. Participants responded to this item on both the time 1 and time 2 surveys.

Post-Traumatic Stress Disorder ($\alpha = .96$ at time 1) symptoms were assessed using the 17-item Post-Traumatic Stress Disorder Checklist (Weathers, Litz, Herman, Huska, & Keane, 1993). Items reflected reactions that soldiers may experience following stressful life events, reflecting the DSM-IV symptoms of PTSD. Soldiers were asked to indicate

how bothered they had been in the past month by any of the 17 listed symptoms of PTSD. Sample items included: “Repeated, disturbing memories, thoughts, or images of the stressful experience” and “Feeling very upset when something reminded you of the stressful experience”. Responses were given on a five point scale ranging from not at all (1) to extremely (5). The measure was included on the time 1 and time 2 surveys. See Appendix C for all PTSD items.

In the present study, criteria specified by the National Center for PTSD (2012) were used to score the responses. To be considered as having PTSD participants had to meet specified DSM-IV symptom criteria and have a severity score greater than 50. The participant was said to meet the DSM-IV criteria for PTSD if he or she provided a rating of 3 or above on: at least one intrusive recollection item (1- 5 in appendix), at least three avoidance/numbing items (6-12), and at least two hyper-arousal items (13-17). The symptom severity score was computed by summing responses from all 17 items. A conservative cutoff score of 50 was selected to indicate severe PTSD based on guidelines from the National Center for PTSD.

Depression ($\alpha = .91$ at time 1) symptoms were assessed using the Patient Health Questionnaire (PHQ) that was developed by Kroenke, Spitzer, and Williams (2001). This scale consisted of 9 items where participants were to indicate how often they had been bothered by the provided item in the past two weeks. Response options were on a four point scale ranging from not at all (1) to nearly every day (4). Sample items included “little interest or pleasure in doing things” and “feeling tired or having little energy”. On an additional item, participants also indicated how difficult the problems made it to do

work, take care of things at home, or get along with others. Response options ranged from not difficult at all (1) to extremely difficult (4). The scale was included in the time 1 and time 2 survey. See Appendix D for all depression items.

Participants were considered as having Major Depressive Disorder in the present study if they met three criteria. First, if they reported “little interest or pleasure in doing things” or “feeling down, depressed, or hopeless” at least more than half the days. Second, if they reported on five or more of the 9 items that they experienced the symptom at least more than half of the days. Third, if they reported at least somewhat difficult on the item asking how difficult the problems made it to do work, take care of things at home, or get along with others.

Alcohol Problem ($\alpha = .72$ at time 1). A problem with excessive alcohol use was assessed using two items from the Two Item Conjoint Screen (TICS; Brown, Leonard, Saunders, & Papasouliotis, 2001). First, participants were asked to indicate if they had used alcohol in the past four weeks. If they responded yes, they were to answer the two TICS items. Those items were “Have you ever felt you wanted or needed to cut down on your drinking?” and “Have you ever used alcohol more than you meant to?” Response options were yes or no. These items were included on the time 1 and time 2 surveys. Participants were considered to have an alcohol problem if they responded yes to at least one of the two items.

Demographics. Demographic information that was collected on both surveys included age, gender, ethnicity, rank, highest education completed, and military tenure.

Analysis Strategy

Prior to hypothesis testing, data were screened for outliers, indicated by Mahalanobis distance scores, in SPSS. Statistical assumptions of normality were also checked. All predictor variables were mean centered to allow for easier interpretation of the results.

Analyses were first conducted cross-sectionally using only the time 1 data. Then the same analyses were tested longitudinally with time 1 predictors of source of support, support influences on treatment seeking, attitude toward treatment seeking, and functional impairment predicting time 2 outcomes of treatment seeking and dropout. In the following analysis description, analyses will be discussed in terms of the longitudinal data. Data was analyzed using SPSS, in three parts corresponding with the hypotheses using a series of linear and logistic regression techniques. Logistic regression was used to predict dichotomous outcome measures which do not result in purely linear relationships with predictors (Peng & So, 2002). Logistic regression converts the data into a more appropriate form to provide results in terms of probabilities or odds ratios. This was used for the present study outcomes of whether or not a soldier sought treatment and whether or not the soldier dropped out of treatment.

For the more complex tests of mediation and moderated mediation, Hayes (2012) PROCESS macro for SPSS was used. PROCESS is a modeling tool that allows for the integration of complex moderation and mediation analyses. The tool was well-suited for testing the hypothesized relationships which included two-path mediation as well as moderated mediation. The PROCESS macro provides 73 templates of mediated and

moderated relationships that can be tested. PROCESS also has the ability to recognize dichotomous outcomes and conduct the appropriate logistic regression when necessary.

The first set of hypotheses that were tested are represented by figure 1. Analyses were done to answer three primary questions: whether or not the sources of support had unique effects on attitude toward treatment and treatment seeking, if attitude toward treatment mediated the relationship between support and treatment seeking, and if those effects depended on functional impairment. First, mean differences for the three sources of support were examined. Then, a hierarchical linear regression was conducted to determine if the three sources at time 1 had unique influences on treatment attitude at time 1. Lastly, a logistic regression was used to determine if the three sources of support at time 1 had unique influences on seeking treatment at time 2. The results of these initial analyses and examination of correlations among the sources of support were used to inform whether or not the sources of support were further examined independently.

A PROCESS template (Hayes, 2012) was used to test the hypotheses about mediated and moderated effects. First, the analysis assessed the direct effects of each source of support at time 1 on treatment seeking at time 2, as well as the indirect effect on treatment seeking through attitude toward treatment seeking at time 1. Indirect and direct effects were examined based on bootstrapping results provided by the PROCESS model. Whether or not the relationship between social support and treatment seeking was significantly mediated by attitude toward treatment seeking was determined by examining the provided confidence intervals, which indicated significance when zero was not included in the interval.

Conditional effects based on functional impairment were also tested. The PROCESS model determined if the direct effect of social support on treatment seeking was moderated by functional impairment at time 1. The model also determined if moderated mediation existed where the mediated effect of social support on treatment seeking through attitude toward treatment seeking was moderated by functional impairment. The test of moderated mediation and moderation of the direct effect included estimates of simple effects for high, moderate, and low levels of impairment to determine the specific nature of the moderated relationship.

The second set of hypotheses represented by figure 2 involved how different sources of support influenced soldiers who had sought treatment, and how those sources affected treatment dropout. To examine the initial hypotheses, a repeated measures ANOVA was used to determine mean differences in what sources of support were most influential in a soldier's decision to seek treatment. A logistic regression was used to determine if the different sources of support at time 1 were differentially related to dropout at time 2. These initial analyses and correlations among the sources of support were considered in determining whether tests of moderation would be conducted separately for each source.

The test for moderated effects included the source of support at time 1 as a predictor of dropout at time 2. The effect of support was expected to depend on functional impairment. The main effects of functional impairment were tested both in the lower order linear form and a higher order quadratic term. The quadratic term determined if there was a non-linear effect of impairment as hypothesized, where those with

problems low in severity or high in severity were more likely to drop out of treatment. Further, the interaction term determined if social support was most helpful in reducing the likelihood of dropout for those on either extreme. The test of moderation included estimates of simple effects for high, average, and low levels of impairment to further determine the specific nature of the moderated relationship.

For the third set of hypotheses, the same procedures were followed as previously described. These hypotheses examined how different leader behaviors at time 1 affected the likelihood of dropout at time 2. A repeated measures ANOVA examined mean differences in which supportive behaviors most influenced soldiers to seek treatment. Again, a logistic regression was used to see if the different supportive behaviors at time 1 differentially relate to dropout at time 2. The results of these analyses and correlations among the leader support items were used to determine if each behavior will be tested separately in the moderated model.

Tests for moderation were conducted using a PROCESS template, where the effect of leader support behaviors at time 1 on dropout at time 2 was expected to be moderated by functional impairment at time 1. The test for moderation included estimates of simple effects to further determine the specific nature of the moderated relationship.

CHAPTER EIGHT

RESULTS

Descriptive Statistics: Cross-Sectional

Descriptive statistics were computed for all study variables. Means, standard deviations, correlations, and scale reliabilities for variables used in analyses for those who indicated they were experiencing a mental health problem or screened positive for a problem are presented in Table 1. Soldiers rated family and friends as most encouraging of treatment seeking ($M = 4.03$). The average rating of attitude toward treatment seeking was slightly above the midpoint of the scale ($M = 4.51$), indicating that soldiers had somewhat positive attitudes toward treatment seeking. The average level of impairment was somewhat low, with a mean of 2.16. The three sources of support were all significantly correlated with one another, with lower correlations between support from family and friends with leader support, $r = .29, p < .01$, and with unit support, $r = .25, p < .01$, and a higher correlation between unit support and leader support, $r = .69, p < .01$. Despite the high correlation between unit and leader support, these sources were still examined independently in hypothesis testing to avoid missing any meaningful distinctions because 53% of the variance between of the two variables was still unshared.

All sources of support were significantly correlated with attitude toward treatment seeking, with attitude correlated with support from family and friends, $r = .18, p < .01$, with unit support, $r = .17, p < .01$, and with leader support $r = .14, p < .01$. Attitude toward treatment seeking was also positively correlated with treatment seeking (as indicated by attending at least one mental health visit and/or reported seeking treatment at

least one location), $r = .25, p < .01$. This provided initial support for a potential mediated relationship as predicted in hypothesis 1, where support influences the soldier's attitude, and attitude influences treatment seeking. Support from family and friends was correlated with treatment seeking, $r = .10, p < .01$, but support from leaders and unit members were not.

Means, standard deviations, correlations, and scale reliabilities for variables used in analyses for those who indicated they had received treatment are displayed in Table 2. On average, soldiers indicated that a spouse or family member was most influential in their decision to seek treatment ($M = 2.51$). Of the specific leader supportive behaviors, instrumental leader support was the most influential to the soldiers' treatment decisions ($M = 1.97$). Functional impairment was again somewhat low, with a mean of 2.19. The different sources of support that influenced soldiers to seek treatment were correlated with one another, with spouse/family support correlated with leader emotional support, $r = .27, p < .01$, and fellow soldier/friend support, $r = .39, p < .01$, and a correlation between fellow soldier/friend support and leader emotional support, $r = .41, p < .01$. Of the different sources of support, only spouse/family support was significantly correlated with treatment dropout, $r = .12, p < .01$; however, this relationship was not in the expected direction. The different leader supportive behaviors were all moderately to highly correlated with one another; however, none of the leader supportive behaviors were significantly correlated with dropout. Lastly, functional impairment was significantly related to treatment dropout, $r = .13, p < .05$.

Hypothesis Testing: Cross-Sectional

The first set of analyses tested hypotheses 1a- 2b. These hypotheses concerned the relationships between social support and treatment seeking for those who reported a mental health problem or screened positive on PTSD, depression, or alcohol problem scales.

First, a repeated measures ANOVA showed that there was a significant difference in mean ratings of the three sources of support for treatment seeking, $F(1.69, 1209.24) = 188.21, p < .01$. Results of the Greenhouse-Geisser test are reported because Mauchly's test of Sphericity was violated. Post-hoc comparisons indicated that ratings of support from family and friends were significantly higher than support from the leader ($p < .01$) and from the unit ($p < .01$); however, the mean ratings of support from the leader and the unit did not significantly differ.

Next, the influence of each source of support on the soldier's overall attitude toward treatment seeking was examined. Each source of support was first tested independently and then together in a full model. Separate hierarchical linear regressions revealed that each source of support was significantly related to attitude toward treatment seeking, controlling for the effects of age and education. Demographic variables of gender, race, and rank were not significantly related to attitude, and were therefore not included to increase statistical power.

Social support from a soldier's family was associated with a more positive attitude toward treatment seeking, $B = .29, p < .01$. Support from a soldier's unit was also associated with a more positive attitude toward treatment seeking, $B = .26, p < .01$. Lastly, leader support also had a positive relationship with attitude toward treatment seeking, $B =$

.19, $p < .01$. When all variables were entered into a full model, with control variables of age and education, a significant positive relationship with attitude toward treatment seeking remained for family and friends, $B = .23$, $p < .01$, and support from unit members, $B = .19$, $p < .05$; however, leader support was no longer significantly related to attitude. A t-test comparing the coefficients for family and friends and unit members, utilizing the error covariance obtained from the regression analysis, revealed the effects of the two sources on attitude did not significantly differ. The results of the full hierarchical linear model are displayed in Table 3.

The effect of each source of support on treatment seeking was next examined in a logistic regression. Control variables of age, education, and functional impairment were entered first, followed by each source of support. Functional impairment was used as a control variable in these analyses because of the consistent relationship found in past literature between the severity of a problem and treatment seeking (e.g., Britt et al, 2011; Fikretoglu et al., 2009). Logistic regressions were conducted for each source of support separately; however, conclusions were not different than a full model with all support sources, so only the results from the full model are reported. Only family support was a significant predictor of treatment seeking, $B = .25$, $SE = .10$, Odds Ratio = 1.28, $p < .05$. Family support explained an additional 3% of variance beyond the effects of age, education, and impairment. Figure 4 displays the relationship between family support and the predicted probability of seeking treatment. The figure suggests that increases in support are not associated with a substantial increase in the probability of treatment until

the level of support is above average. Leader support and unit support did not uniquely effect treatment seeking. The results of the logistic regression are displayed in Table 4.

Overall, these results provided partial support for hypothesis 1a, which stated that the sources of support would have unique influences on attitude toward treatment seeking and treatment seeking behaviors. In line with the predicted relationships, overall results suggested that family support was most strongly related to attitude toward treatment seeking and treatment seeking behaviors, although the influence of family support did not significantly differ from the influence of unit support on attitude.

To examine hypotheses 1b, 2a, and 2b, a moderated mediation model was conducted using the PROCESS template. A separate PROCESS model was conducted for each source of support to determine if the effect of family support on treatment seeking was mediated by attitude, and to determine if support from unit members and leaders could relate to treatment seeking through their effect on attitude, although direct relationships between unit and leader support and treatment seeking were not found. Bootstrap intervals revealed that attitude toward treatment seeking did mediate the relationship between social support and treatment seeking for all sources of support, thus supporting hypothesis 1b.

Furthermore, the mediated effect of support through attitude on treatment seeking was moderated by functional impairment, supporting hypothesis 2b. Hypothesis 2a, that the direct effect of social support on treatment seeking was moderated by functional impairment, was not supported. The results of the moderated mediation model for all sources of support are displayed in Table 5. The interaction between functional

impairment and attitude toward treatment seeking is illustrated in Figure 5. This figure represents the mediated effect of family support through attitude. The moderated mediation relationships took a similar form for leader and unit support. The interaction indicates that as functional impairment increases, the mediated effect of social support through attitude influencing treatment seeking decreases. Hypothesis 2b predicted that social support would be most influential for those with problems moderate in impairment. The hypothesis was partially supported in that the mediated relationship influencing treatment seeking was stronger for moderate impairment problems as compared to high impairment problems; however, contrary to predictions, the strongest effect was for those with problems low in impairment.

The second set of analyses tested hypotheses 3-5, which concerned the relationship between different sources of support influencing a soldier's treatment decision and later treatment dropout. These analyses were limited to only those soldiers who had reported receiving treatment in the past 12 months. First, mean differences in ratings of who most influenced soldiers to seek treatment were examined. A repeated measures ANOVA revealed a significant difference in mean ratings of support influences, $F(2, 34) = 56.65, p < .01$. Post-hoc comparisons revealed that support from a spouse/family member as an influence to treatment seeking was rated significantly higher than support from a leader ($p < .01$) or support from a fellow soldier/friend ($p < .01$), thus supporting hypothesis 3. The mean ratings of support from a fellow soldier/friend and support from a leader did not significantly differ.

A series of logistic regressions were conducted to determine if social support from the three sources of influence related to whether or not a soldier dropped out of treatment. These analyses were first done independently to see how each source of support predicted dropout beyond the effects functional impairment. Functional impairment was again used as a control variable because of the relationships between impairment and dropout found in past literature (Derisley & Reynolds, 2000; Fenger et al., 2011). Demographic variables of age, gender, ethnicity, education, and rank were not significantly related to treatment dropout and were therefore excluded as control variables to increase statistical power. When entered in separate logistic regressions, spouse/family support had a significant positive relationship with treatment dropout, beyond the effects of functional impairment, $B = .22$, $SE = .10$, Odds ratio = 1.24, $p < .05$. Contrary to the hypothesized relationship, increases in family support were associated with an increased probability of dropout (See Figure 6). Leader support and unit support did not have a significant relationship with treatment dropout beyond the effect of functional impairment.

In the full logistic model, none of the sources of support significantly predicted treatment dropout. With these results, hypothesis 4, stating that support would be associated with a lesser likelihood of dropout, was not supported. As partial support for 4a, only support from a family member or spouse emerged as a significant predictor; however, this support did not remain significant in the full model and the relationship was not in the expected direction.

Hypothesis 5a predicted that functional impairment would have a non-linear relationship with treatment dropout. In a logistic regression, linear and quadratic terms

for functional impairment were entered in two steps. Demographic control variables, which were found not to be significantly related to dropout, were not entered to increase statistical power. The linear term for functional impairment was found to have a significant positive relationship with treatment dropout, $B = .44$ $SE = .14$, Odds Ratio = 1.55, $p < .05$. The non-linear functional impairment term had a significant effect beyond the effects of the linear term, $B = -.19$, $SE = .09$, Odds Ratio = .83, $p < .05$. The pattern of the non-linear relationship differed from the hypothesized relationship. As shown in Figure 7, the predicted probability of dropout increased from low levels of impairment to approximately one standard deviation above the mean level of impairment ($M = 2.19$), then the probability of dropout decreased as problems increased in impairment. Those with a problem causing moderate to somewhat severe impairment had the highest predicted probability of dropout. Therefore, the non-linear nature of the relationship between impairment and dropout was supported, but not in the predicted direction. The results of the logistic regression are displayed in Table 6.

Hypothesis 5b predicted that functional impairment would moderate the relationship between support and dropout. A PROCESS model to test for moderation was conducted for each support influence. There was no significant interaction between any of the three support influences and functional impairment to predict dropout; therefore, hypothesis 5b was not supported.

The third and final set of analyses tested hypotheses 6-8, which concerned the effect of different supportive leader behaviors on later dropout. Like the second set of analyses, these analyses were limited to only those soldiers who had reported receiving

treatment in the past. First, mean differences in leader behaviors that influenced soldiers to seek treatment were examined. A repeated measures ANOVA revealed significant mean differences in ratings of leader behaviors that influenced the soldier to seek treatment, $F(2.29, 729.61) = 110.14, p < .05$. The Greenhouse-Geisser value is reported because the assumption of sphericity was violated. Post-hoc comparisons revealed that all forms of leader support (instrumental, informational, emotional, and authoritative) were significantly different from one another, $p < .01$. Instrumental support was rated as the most influential of the leader behaviors in a soldier's decision to seek treatment, thus supporting hypothesis 6.

Next, all forms of leader support were examined as predictors of later treatment dropout, controlling for the effect of functional impairment. Again, demographic variables of age, gender, race, education, and rank were not significantly related to dropout and were therefore not included as control variables. Separate logistic regressions were first done to examine the influence of each type of leader support on dropout, and then all supportive behaviors were entered in one logistic regression. No forms of leader support emerged as significant predictors of dropout, thus hypotheses 7, 7a, and 7b were not supported.

Hypothesis 8 proposed that functional impairment would moderate the relationship between leader support and dropout. This relationship was tested without accounting for control variables for exploratory purposes. Hypothesis 8 was partially supported. A PROCESS model was conducted separately for each type of leader support. Results revealed that there was no significant interaction between instrumental support or

authoritative support and functional impairment. There was a significant interaction between informational support and functional impairment, $B = .17$, $SE = .08$, Odds Ratio = 1.18, $p < .05$. Examining the simple slopes revealed that at low levels of functional impairment, informational support had a negative relationship with dropout, $B = -.17$, but at average and high levels of impairment, informational support had a positive relationship with dropout, respectively $B = .04$ and $B = .25$. The simple slopes for each level of impairment, however, were not significantly different from zero so these results should be interpreted with caution. The relationships did provide some evidence that the influence of support may depend on the degree of impairment; however, the relationships were not in the expected direction and the simple slopes were non-significant. This interaction is depicted in Figure 8.

There was also a significant interaction between emotional leader support and functional impairment, $B = .16$, $SE = .08$, Odds Ratio = 1.17, $p < .05$. Somewhat contrary to the previous interaction, emotional leader support had a negative relationship with dropout at both low and average levels of impairment, respectively $B = -.21$ and $B = -.01$, but leader support had a positive relationship with dropout for high levels of impairment, $B = .18$. None of the simple slopes, however, were significantly different from zero; therefore, firm conclusions cannot be drawn. These relationships again show some support for the idea that the influence of support may depend on the level of impairment; however, the relationships were not in the expected direction and the simple effects were non-significant. The interaction between emotional leader support and impairment is

depicted in Figure 9. The results of the PROCESS models for informational support and emotional support from leaders are displayed in Table 7.

Descriptive Statistics: Longitudinal

Descriptive statistics were computed for all study variables in the matched dataset. The correlations and descriptive statistics for how study variables at time 1 related to treatment seeking at time 2 are displayed in Table 8. These values were based on the matched sample of only those who had a problem as indicated by the self-report item or diagnostic scales at time 1, but had not yet sought treatment for the problem at time 1. As in the cross-sectional data, support from friends and family for treatment seeking was rated highest in the matched data. The three sources of support at time 1 were all significantly correlated with one another; however, none of the three sources of support were significantly correlated with seeking treatment at time 2.

Table 9 displays correlations and descriptive statistics for study variables at time 1 relating to treatment dropout at time 2. These values were based on those who had reported receiving treatment at time 1 or time 2, but had not dropped out of treatment at time 1. No sources of support or leader supportive behaviors were significantly correlated with dropping out of treatment at time 2.

Hypothesis testing: Longitudinal

Hypotheses were tested longitudinally using the matched data set. The first set of longitudinal analyses was limited to only those who reported a problem or screened positive for a problem at time 1 but had not sought treatment at time 1, or those who

indicated they had sought treatment at time 2 but not at time 1. This resulted in a sample of 147.

The first hypotheses concerned the influence of sources of support at time 1 on treatment seeking at time 2, as mediated by attitude. First, a series of logistic regressions were conducted to determine how each source of support at time 1 influenced treatment seeking at time 2. The effects of support were tested in three separate logistic regressions and in one full logistic regression model. The effect of support on treatment seeking was non-significant for all sources of support in independent tests and the full model. Three separate process models were also conducted to see if support at time 1 may have a mediated effect on treatment seeking at time 2 through overall attitude toward seeking treatment at time 1. The model also included a test of moderated mediation to see if the mediated effect depended on functional impairment. For each source of support, there was a significant influence of support on attitude toward treatment seeking, but neither support nor attitude had a significant effect on treatment seeking at time 2. The tests for mediation, moderation, and moderated mediation were also all non-significant. Thus, hypotheses 1a, 2a, and 2b were not supported in the longitudinal analyses.

The next set of hypotheses concerned what sources of support and leader supportive behaviors influence the likelihood of dropping out of treatment. For these hypotheses, the sample was restricted to those who had reported receiving treatment at time 1 or time 2 but had not reported dropping out of treatment at time 1. This resulted in a sample of 107.

The effect of each type of support that influenced the soldier to seek treatment at time 1 on treatment dropout at time 2 was examined using a series of separate logistic regressions, and one final logistic model including all variables. None of the supportive influences at time 1 had a significant effect on treatment dropout at time 2, thus Hypothesis 4a was not supported in the longitudinal analyses. In an additional logistic regression, the effect of functional impairment on dropout was examined. Neither the linear nor the quadratic forms of functional impairment at time 1 were significant predictors of dropout at time 2; therefore, hypothesis 5a was not supported.

Each source of support was also entered into a PROCESS model, where the effect of support on dropout was moderated by functional impairment. All main effects of functional impairment and support for treatment seeking, as well as the interaction between the two were not significant predictors of dropout at time 2. Thus, the results of the longitudinal analyses did not support hypothesis 5b.

The last set of hypotheses examined how each leader supportive behavior that influenced soldiers to seek treatment at time 1 affected dropout at time 2. In three separate logistic regressions, and one logistic regression with all supportive behaviors included, no leader supportive behaviors emerged as significant predictors of dropout at time 2. Lastly, the potential moderating effects of functional impairment were examined. All main effects of functional impairment and leader supportive behaviors, as well as the interaction between the two, were not significant predictors of dropout at time 2.

CHAPTER NINE

DISCUSSION

Discussion of Findings

Many soldiers experience mental health problems as a result of the occupational demands to which they are exposed, but choose not seek treatment from a mental health professional (Britt et al., 2011; Hoge et al., 2006). Research attention has been given to barriers that keep soldiers from seeking the treatment they need, such as stigma or practical barriers (Britt et al., 2008; Hoge et al., 2004); however, less research has focused on facilitators that encourage soldiers to seek treatment. In the present study, social support for treatment seeking was examined as a facilitator of seeking treatment. Due to the complex nature of the social support construct, support specifically for treatment seeking was assessed from the three different sources of family and friends, unit members, and leadership, as well as different supportive leader behaviors that may influence treatment seeking and treatment retention.

The first set of hypotheses examined how support can influence soldiers' decisions to seek treatment. Cross-sectional analyses provided evidence that social support from important others is related to a soldier's attitude toward treatment seeking, and ultimately their decision to seek treatment through influencing their attitude. Initial analyses revealed that support for treatment seeking from all three sources of support was related to a more positive attitude toward treatment seeking. Support from a soldier's family was also found to predict treatment seeking directly, but unit and leader support did not. The findings support previous research which theorizes that those closest to an

individual will have the strongest influence on whether or not an individual decides to seek treatment (Gottlieb, 1976).

The findings also highlight that although close family members may exert a stronger influence by supporting soldiers, organizational agents still influence a soldier's attitude. The unit and leaders may not directly affect the treatment decision in the same way family members may, but they can affect the soldier's attitude, which then affects treatment decisions. These findings add to past research on positive leadership and unit cohesiveness in the military (Britt et al., 2012; Wright et al., 2009) by showing that support for treatment from these organizational agents is related to soldiers' attitudes toward treatment seeking.

In the cross-sectional analyses, personal attitude toward treatment seeking was found to be a mediator of the effect of support on treatment seeking. These findings complement previous findings, such as by Vogel (2005), that personal attitude mediates the effect of social support and social norms on intentions to seek treatment. As a novel contribution from this study, results further indicated that this mediated relationship can vary based on levels of functional impairment. Moderated mediation was found where the effect of social support through attitude was stronger for those with problems causing moderate impairment as compared to those causing high impairment. However, the strongest effect was for those with problems causing low impairment. This interaction supports the hypothesized effect, that those with problems high in impairment may have symptoms that are severe enough to warrant treatment on their own, as past research has consistently found higher symptom interference to increase the likelihood of getting

treatment (Angst et al., 2010; Britt et al., 2011). Those with less severe or moderate levels of impairment may experience more uncertainty on whether or not treatment is needed, and thus benefit more from supportive others encouraging them to seek treatment.

The relationships among support, attitude, and treatment seeking were not significant when tested longitudinally with the matched sample. When restricting the sample to only those who reported a problem at time one, but had not yet sought treatment, the size of the sample was significantly reduced. Therefore, it is possible that insufficient power contributed to the lack of significant longitudinal findings.

The second set of hypotheses examined how various sources of support influenced a soldier's decision to seek treatment, and whether social support was related to treatment retention. For soldiers who had reported that they had sought treatment, spouses and family members were rated most highly as an influence to their treatment decision. Contrary to our expectations, support from family members or a spouse was positively related to treatment dropout. Past research has noted that important others can be exceptionally important in helping individuals going through a change process (Prochaska, DiClemente, & Norcross, 1992). Contrary to the idea that helping relationships are always beneficial, other studies have found that veterans in treatment who are married may have higher stigma concerns and their relationships with others may suffer further when they are experiencing a mental health problem (Ouimette et al., 2011; Khaylis et al., 2011). It could be that those closest to the soldier add additional pressure to the treatment process that may make it more difficult, and thus the soldier is more likely to dropout.

Alternatively, some researchers have examined the influence of informal support as an alternative to professional treatment, proposing that individuals may cope with problems through those informal support sources rather than utilizing professional services (Gottlieb, 1976). Soldiers could possibly begin treatment, but then chose to utilize informal support from those close to them rather than continuing with professional services. Additional research is needed to clarify these potential relationships with treatment dropout.

Leader support and unit support were not significantly related to treatment dropout when controlling for the effects of functional impairment. Again, this could be evidence that those closest to the soldier are ultimately most influential in treatment seeking and treatment retention. It should be noted, however, that the number of soldiers who did drop out of treatment was small; therefore, future studies should seek to further understand how unit members and leaders could influence treatment retention.

The study also examined how functional impairment may moderate the relationship between support and dropout. It was hypothesized based on prior research (e.g., Fenger et al., 2011) that functional impairment would have a non-linear relationship with treatment dropout, where those with problems either low in impairment or high in impairment would be most likely to drop out. Support was found for a non-linear relationship; however, it was in the opposite direction. Soldiers with problems low or high in impairment had the lowest probability of dropout. Those with moderate impairment had the highest probability of dropout.

It is possible, contrary to the predicted rationale, that those with problems causing high impairment experienced negative interference from their symptoms, and thus wanted to continue in treatment to alleviate symptoms. The reason for low dropout for those with problems causing low impairment is somewhat more surprising. It could be that those with low impairment stayed in treatment because it was not emotionally difficult, but was improving symptoms. As another potential explanation, it could have been the case that low impairment problems were improved in fewer sessions, and the desired outcome was completed in less time. For those with moderate problems, dropout may have been most likely because their problems were causing significant impairment, but it was not so severe that they felt treatment was absolutely necessary.

Interactions between functional impairment and the three sources of support for treatment were not significant, and in the longitudinal analyses, neither social support nor functional impairment was significantly related to treatment retention. The lack of interaction effects and significant longitudinal relationships may be a result of insufficient power to detect the relationships. The sample of interest was reduced substantially for these analyses because very few soldiers did drop out of treatment.

The final set of hypotheses examined how different leader supportive behaviors influenced a soldier's decision to seek treatment and treatment retention. Past research has found that different supportive behaviors can have varying effects on different outcomes (e.g., Malecki & Demaray, 2003). In the present study, different leader supportive behaviors were differentially endorsed as influential to the soldiers' treatment decisions. Instrumental support from leaders (allowing time of work to go to

appointments) was endorsed most highly as influencing the soldier's decision.

Instrumental support may be most important form of support from leaders based on the proposed logic that soldiers will first seek emotional support from those closest to them, namely friends and family, and then more practical support will be most needed from leaders to facilitate getting treatment.

All forms of leader support were also examined as predictors of dropout; however, none were significant predictors beyond the effects of functional impairment. Additional tests did show significant interactions between informational leader support and functional impairment, as well as between emotional leader support and functional impairment in the prediction of dropout. The relationship between informational support and dropout was negative at low levels of impairment, but positive at average and high levels of impairment. Similarly, the relationship between emotional leader support and dropout was negative at low and average levels of impairment, but positively related to dropout at high levels of impairment. These results should be interpreted with caution, however, because none of the simple slopes for the effect of support on dropout were significantly different from zero. Although the slopes of the effect were all different from one another, the overall effect of support on dropout was not significant. The results of the present study may be an indicator that the level of impairment is worthy of further consideration, but the results do not provide conclusive evidence about the relationships between leader supportive behaviors, functional impairment, and dropout.

In the longitudinal analyses, no supportive leader behaviors were significant predictors of treatment dropout. Again, this may be the result of a lack of statistical

power to detect the relationships in the reduced sample. As leaders are important influences in the military culture, the effect of supportive leader behaviors on treatment retention warrants additional research.

Implications of Findings

The results of this study hold several important theoretical and practical implications. First, the present study contributes to the research literature by showing that social support is related to whether or not soldiers seek treatment. As past research has focused on barriers to treatment seeking, this study is among the first to focus on what facilitates treatment decisions, showing the value of social support from important others in treatment seeking. Extensive research literature has examined the benefits of social support in the stress process (e.g., Cohen & Willis, 1985; Viswesvaran, Sanchez, & Fisher, 1999); however, the present study was among the first to examine how social support specifically for treatment seeking from important others can affect a soldier's decisions to seek treatment and to remain in treatment.

Second, the study provided evidence that researchers should not examine social support as a simple construct because support from different individuals shown through different behaviors may have different effects. Our study provided evidence that support from different sources can have unique relationships with attitudes toward treatment seeking and treatment seeking behaviors. Of practical significance, we found friends and family members were generally more influential to a soldier's attitude and treatment decisions. The importance of family support may encourage the organization to

emphasize family involvement and enhance the availability of educational resources for family members of soldiers in treatment.

The results also show that support for treatment from leaders and unit members can influence soldier attitudes toward treatment seeking. Attitude is then related to treatment seeking behaviors. Thus, it is important for unit members and leaders to be supportive of treatment because of the effect they may have on the soldier's attitude. In past research, positive behaviors from the leader and unit have been associated with lower perceptions of stigma and barriers (Wright et al., 2009). The present study further demonstrates the value of positive unit members and leadership, not only to reduce barriers, but also in facilitating treatment by offering support. These results should be encouraging for the military as a whole to emphasize the importance of supporting fellow unit members in seeking treatment, potentially through added support training.

In addition to differentiating the source of social support, our findings provided initial evidence that the type of supportive behavior may also be important. We found that there were mean differences in the ratings of what leader behaviors most influenced soldiers to seek treatment, where instrumental support was rated most highly. Therefore, certain types of support may be more critical for leaders to provide. Again, it may be that soldiers look to those closest to them for emotional support, but may be especially in need of instrumental support from leaders to remove practical barriers involved in seeking treatment. The supportive leader behaviors were not found to predict treatment dropout as was expected, but this should be investigated further in future research. Other

studies may also seek to understand how the unit members and family and friends could also provide different forms of behavioral support that are more or less effective.

As a third contribution, the present study provided insight into the mechanism by which support can influence treatment seeking. In this study, attitude toward treatment seeking mediated the relationship between support for treatment seeking and treatment seeking behaviors. This finding holds both theoretical and practical significance, highlighting that support can affect a soldier's decision to seek treatment, but this is by influencing their personal attitude. The level of functional impairment the soldier's experienced also affected the mediated relationship. As Bamberger (2009) discussed, providing help involves an interaction between a provider and a recipient, so the characteristics of the individual can influence the effectiveness of provided support. Thus, characteristics of the problem the person is experiencing should be considered by those providing support in order to provide the most effective support.

Lastly, the present study began to address the issue of soldier dropout. Past research has found dropout to be a significant problem among soldiers (e.g., Erbes, Curry, & Leskela, 2009; Harpaz-Roten & Rosenheck, 2011); however, few studies to date have examined the reasons for dropout. The present study only found support from family and friends to predict dropout, but this was not in the expected direction. A positive relationship where more support was associated with a greater risk for dropout was a surprising finding worth additional research attention.

Further research is need to confirm what ways family members may be increasing the risk of dropout, for example if it is by serving as a substitute for treatment or placing

too much pressure on the soldier in treatment. If researchers can determine the underlying reasons for this relationship, they can encourage further efforts to educate family and friends on the importance of staying in professional treatment, rather than trying to rely on informal support, or providing more information on how to more effectively encourage a soldier to stay in treatment.

Limitations and Directions for Future Research

There are several limitations in the present study that highlight potential areas for future research. First, the study utilized all self-report data. While this is an optimal way to capture perceptions of support and personal attitudes, researchers have noted some issues such as concerns about confidentiality or social desirability that may affect the degree of accuracy of self-reported health symptoms (Del Boca & Nol, 2000). The participants in the present study were ensured that their responses would be anonymous to encourage honest reporting.

Second, the assessments of social support were based on one-item measures. Past research has established that single item measures can demonstrate comparable validity to that of multiple item measures (Bergkvist, & Rossiter, 2007), but it would be preferable to utilize multi-item measures in future studies. The support measures were targeted specifically for treatment seeking, and should have adequately captured the support of interest. Future studies should also assess social support using other measures, perhaps including larger inventories of possible supportive behaviors that may facilitate treatment seeking. Researchers could also utilize more general measures of support in conjunction with measures of support specifically for treatment seeking to better

understand whether general support functions more strongly as a facilitator to treatment seeking or more as an informal source of treatment for the problem.

Third, the present study was not able to replicate the cross-sectional findings with a longitudinal sample. As previously discussed, this may be a function of statistical power, as the size of the matched sample was substantially smaller than the cross-sectional sample. Future studies should seek to understand how social support may affect treatment decisions over time with larger samples of active duty soldiers. Such studies should seek to capture potential changes in perceived support, attitude, and willingness to seek treatment over time.

There are several other areas where future research could extend the findings of the present study. Two important contributions of the present study were finding that the effect of support on treatment seeking is mediated by overall attitude toward treatment seeking, and also that this may depend on the level of functional impairment experienced by the soldier. Further research should seek to better understanding mediating and moderating mechanisms that may impact treatment seeking decisions. The present study examined functional impairment as a moderator, but various other factors could also moderate the relationship between support and treatment seeking. Studies should seek to understand how many of the different predictors of treatment seeking including functional impairment, support, stigma, practical barriers, and attitudes about treatment may interact with one another to predict treatment decisions. In addition to further studies with military personnel, researchers should also seek to apply the results of this study to other high stress occupations, such as police officers or first responders.

Future research should also seek to better understand why soldiers drop out of treatment. Although past research has found that dropout rates are high among current veterans, little is known about the reasons that soldiers dropout of treatment. This is an important direction for future research to address so that findings can be applied to encourage treatment retention. As an additional concern, the present study examined the effect of a command referral on the likelihood of dropout; however, the relationship between the two was not significant. Our sample was limited in the number of soldiers who were command referred for treatment, so we encourage future research to examine the relationship between command referrals and treatment outcomes. As this is a unique instance that commanders can require treatment, it is important to understand the consequences of this for the soldiers in need of treatment.

Conclusion

Many soldiers experience mental health problems as a result of the conditions to which they are exposed in their job; however, many who may benefit from professional treatment do not seek treatment. Past research has found that factors such as stigma, practical barriers, beliefs about treatment, and self-reliance can be barriers for soldiers in need of mental health treatment. The present study adds that support for treatment seeking from friends and family, unit members, and leaders can facilitate decisions to seek treatment through improving soldier attitudes toward treatment. The present study also provided initial evidence that support from family members or spouses may influence a soldier's likelihood of staying in treatment, but further research is need to draw strong conclusions. Continued research and application of the present findings

should seek to enhance social support provided to soldiers to encourage them to get needed treatment to improve their quality of life and military service.

APPENDICES

Appendix A

Influences to treatment

1. My leaders allowed me time off work to attend treatment.
2. My leaders gave me information on where to go for treatment.
3. My leaders were supportive of seeking treatment.
4. My spouse/family encouraged me.
5. A fellow soldier or friend encouraged me.
6. I was command-referred (ordered to get treatment).

Appendix B

Treatment Locations

1. Mental health professional (such as a psychologist or social worker) at the Behavioral Health Clinic (Bld. 816)
2. Mental health professional at the 703rd Aid Station
3. Mental health professional at the North Troop Medical Clinic (TMC)
4. Mental health professional at another military facility
(Location:_____)
5. Mental health professional at a civilian facility
6. Primary care/general medical doctor at a military facility
7. Primary care/general medical doctor at a civilian facility
8. Chaplain or spiritual advisor
9. Received treatment from another source

If yes, please describe:_____

Appendix C

Measure of PTSD symptoms

1. Repeated, disturbing memories, thoughts, or images of the stressful experience
2. Repeated, disturbing dreams of the stressful experience
3. Suddenly acting or feeling as if the stressful experience were happening again (as if you were re-living it)
4. Feeling very upset when something reminded you of the stressful experience
5. Having physical reactions (like heart pounding, trouble breathing, sweating) when something reminded you of the stressful experience
6. Avoiding thinking about or talking about the stressful experience or avoiding having feelings related to it
7. Avoiding activities or situations because they reminded you of the stressful experience
8. Trouble remembering important parts of the stressful experience
9. Loss of interest in activities that you used to enjoy
10. Feeling distant or cut-off from other people
11. Feeling emotionally numb or being unable to have loving feelings for those close to you
12. Feeling as if your future somehow will be cut short
13. Trouble falling or staying asleep
14. Feeling irritable or having angry outbursts
15. Having difficulty concentrating

16. Being “super alert” or watchful or on-guard

17. Feeling jumpy or easily startled

Appendix D

Depression Symptoms

1. Little interest or pleasure in doing things
2. Feeling down, depressed, or hopeless
3. Trouble falling or staying asleep, or sleeping too much
4. Feeling tired or having little energy
5. Poor appetite or overeating
6. Feeling bad about yourself-or that you are a failure or have let yourself or your family down
7. Trouble concentrating on things such as reading the newspaper or watching television
8. Moving or speaking so slowly that other people could have noticed? Or the opposite –being so fidgety or restless that you have been moving around a lot more than usual
9. Thought you would be better off dead or of hurting yourself in some way

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Table 1. Descriptive statistics and correlations among variables for those with a mental health problem.

Variable	Mean	SD	1	2	3	4	5
1. Friends and family would encourage me to go get treatment	4.03	.97	--				
2. My leaders would encourage me to get treatment	3.35	1.11	.29**	--			
3. My fellow unit members would encourage me to get treatment	3.31	1.01	.25**	.69**	--		
4. Attitude toward seeking treatment	4.51	1.59	.18**	.14**	.17**	--	
5. Functional Impairment	2.16	1.16	.02	-.28**	-.15**	.07*	(.89)
6. Treatment Seeking	.33	.47	.10**	-.05	-0.03	.25**	.28**

** p< 0.01 level .

*p< 0.05 level.

N range = 690 – 717.

Table 2. Descriptive statistics and correlations for those who received treatment.

	Mean	SD	1	2	3	4	5	6	7
1. My spouse/family encouraged me.	2.51	1.30	--						
2. A fellow soldier or friend encouraged me.	1.80	1.35	.39**	--					
3. Instrumental Leader Support	1.97	1.25	.25**	.31**	--				
4. Leader Informational Support	1.39	1.31	.22**	.44**	.49**	--			
5. Leader Emotional Support	1.69	1.32	.27**	.41**	.66**	.72**	--		
6. Leader Authoritative Support	.64	1.21	-.05	.07	.20**	.20**	0.1	--	
7. Functional Impairment	2.19	1.20	.03	-.12*	-.19**	-.20**	-.27**	-.05	(.90)
8. Treatment Dropout	.28	.45	.12*	.09	-.11	-.004	-0.03	-.001	.13*

** p< 0.01 level.

*p< 0.05 level.

N range = 323 – 422.

Table 3. Predictors of attitude toward treatment seeking.

	Variable	B	SE B	R ²	ΔR ²	ΔF
1	Constant	4.37	.25			
	Age	0.10	0.07			
	Education	-0.04	0.06	0.004	0.004	1.25
2	Constant	4.38	.24			
	Age	0.08	0.07			
	Education	-0.02	0.06			
	Family Support	0.29*	0.06	0.03	0.03	21.69**
3	Constant	4.38	.24			
	Age	0.08	0.07			
	Education	-0.03	0.06			
	Family Support	0.24*	0.06			
	Leader Support	0.13*	0.06	0.04	0.01	5.35*
4	Constant	4.40	.24			
	Age	0.07	0.07			
	Education	-0.02	0.06			
	Family Support	0.23*	0.06			
	Leader Support	0.02	0.07			
	Unit Support	0.19*	0.08	0.05	0.01	5.17*

** p< 0.01 level .

*p< 0.05 level.

N range = 699- 701.

Table 4. Predictors of seeking treatment.

Predictor	<i>B</i>	<i>SE</i>	<i>Wald</i>	Sig	Odds Ratio
Constant	-2.22	.43	--	--	--
Age	0.39**	.10	16.6	.00	1.47
Education	-0.21*	.09	5.33	.02	0.81
Functional Impairment	.50*	.08	40.84	.00	1.65
Family Support	.25*	.10	5.79	.02	1.28
Leader Support	.02	.11	0.04	.84	1.02
Unit Support	-.06	.12	0.23	.63	0.94
<i>N</i> range = 672 - 674.					

Table 5. Moderated mediation model for predictors of treatment seeking.

Logistic Regression Summary: Family Support				
Predictor	B	SE B	Sig	Odds Ratio
Constant	-5.05	.74		
Attitude toward treatment seeking	.67	.14	< .001	-.17
Family support	.06	.21	.79	-1.24
Functional Impairment	1.09	.24	< .001	.04
Attitude x Functional Impairment	-.12	.05	.01	.88
Family support x Functional Impairment	.04	.07	.57	-1.40
Index of Moderated Mediation				
Mediator	Index	SE	Boot Lower CI	Boot Upper CI
Attitude	-.04	.02	-.08	-.01
Logistic Regression Summary: Leader Support				
Predictor	B	SE B	Sig	Odds Ratio
Constant	-5.16	.74		
Attitude toward treatment seeking	.70	.14	<.001	-.15
Leader Support	-.11	.17	.53	.90
Functional Impairment	1.10	.24	<.001	.04
Attitude x Functional Impairment	-.13	.05	.01	.88
Leader support x Functional Impairment	.03	.06	.58	-1.52
Index of Moderated Mediation				
Mediator	Index	SE	Boot Lower CI	Boot Upper CI
Attitude	-.002	.01	-.06	-.01

Logistic Regression Summary: Unit Support

Predictor	B	SE B	Sig	Odds Ratio
Constant	-6.16	.74		
Attitude toward treatment seeking	.70	.14	<.001	-.15
Leader Support	-.11	.18	.53	.90
Functional Impairment	1.10	.24	<.001	.04
Attitude x Functional Impairment	-.13	.05	.01	.88
Leader support x Functional Impairment	.03	.06	.58	-1.52

Index of Moderated Mediation

Mediator	Index	SE	Boot Lower CI	Boot Upper CI
Attitude	-.02	.01	-.06	-.01

N = 684 for family support.

N = 684 for leader support.

N = 685 for unit support.

Table 6. Non-linear effect of functional impairment on treatment dropout.

Predictor	B	S.E.	Wald	Sig.	Odds Ratio
Constant	-2.58	.61	--	--	--
Functional_Imp_Avg	1.25	.51	6.13	.01	3.51
Func_Imp_quadratic	-0.19	.09	4.23	.04	.83

N = 673

Table 7. Interactions between leader supportive behaviors and functional impairment.

Logistic Regression Summary: Informational Leader Support

Predictor	B	SE	Sig	Odds Ratio
Constant	-1.50	.28		
Functional Impairment	.27	.11	.01	-.57
Informational Support	-.35	.21	.10	.41
Impairment x Support	.17	.08	.04	-.77

Logistic Regression Summary: Emotional Leader Support

Predictor	B	SE	Sig	Odds Ratio
Constant	-1.50	.29		
Functional Impairment	.26	.11	.02	-.59
Informational Support	-.38	.21	.07	.68
Impairment x Support	.16	.08	.04	-.80

N = 315 for informational support.

N = 313 for emotional support.

Table 8. Longitudinal data descriptive statistics and correlations among variables for those with a mental health problem who had not yet sought treatment at time 1.

	Mean	SD	1	2	3	4	5
1. Friends and family would encourage me to go get mental health treatment	4.00	0.99	--				
2. My leaders would encourage me to go get treatment	3.44	1.07	.43**	--			
3. My fellow unit members would encourage me to go get treatment	3.38	1.00	.34**	.69**	--		
4. Attitude toward seeking treatment	4.20	1.68	.17*	.21**	.29**	--	
5. Functional Impairment	1.92	1.05	-0.16	-.27**	-.17*	-0.02	(.87)
6. Treatment Seeking	0.24	0.43	0.03	-0.04	-0.08	0.11	0.03

** $p < .01$.

* $p < .05$.

N range = 137 – 146.

Table 9. Longitudinal data descriptive statistics and correlations among variables for those who received treatment at time 1 or time 2, but had not dropped out at time 1.

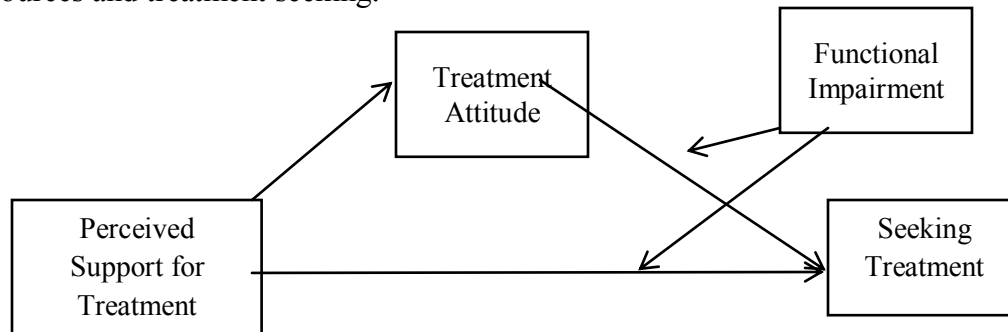
	Mean	SD	1	2	3	4	5	6	7
1. My spouse/family encouraged me.	2.34	1.30	--						
2. A fellow soldier or friend encouraged me.	1.89	1.33	.62**	--					
3. Leader instrumental support	1.92	1.33	.21	.33*	--				
4. Leader informational support	1.72	1.39	.21	.43**	.64**	--			
5. Leader emotional Support	1.92	1.36	.26*	.43**	.84**	.71**	--		
6. Leader Authoritative Support	.75	1.30	-.20	-.02	.07	.14	0.01	--	
7. Functional Impairment	1.99	1.07	.28*	.02	-.17	-.09	-0.11	-0.22	(.87)
8. Dropout	.25	.44	.23	.24	.03	.27	0.15	-0.04	0.15

** $p < .01$.

* $p < .05$.

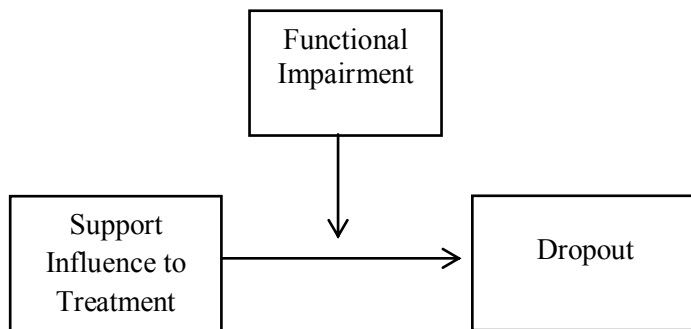
N range = 62 - 107

Figure 1. Hypothesized model of the relationship between social support from different sources and treatment seeking.



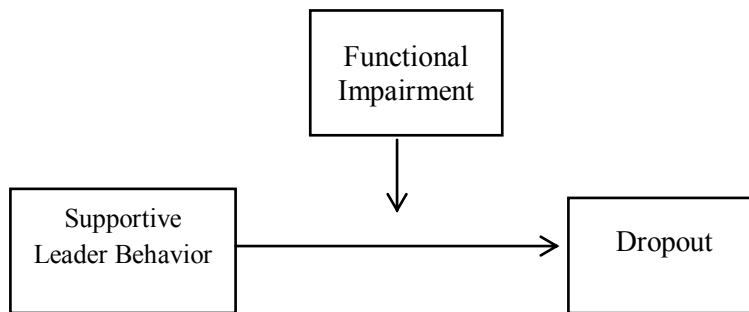
Note. Perceived support for treatment tested separately for 1) Perceived support from family and friends, 2) Perceived support from unit, and 3) perceived support from leader.

Figure 2. Hypothesized model of the relationship between social support from different sources and treatment retention.



Note. Perceived support for treatment tested separately for 1) Perceived support from family and friends, 2) Perceived support from unit, and 3) perceived support from leader.

Figure 3. Hypothesized model of the relationship between supportive leader behaviors and treatment retention.



Note. Supportive leader behavior tested separately for 1) Instrumental Support 2) Emotional Support, 3) Informational Support, and 4) Authoritative Support.

Figure 4. Effect of family support for treatment on the predicted probability of seeking treatment.

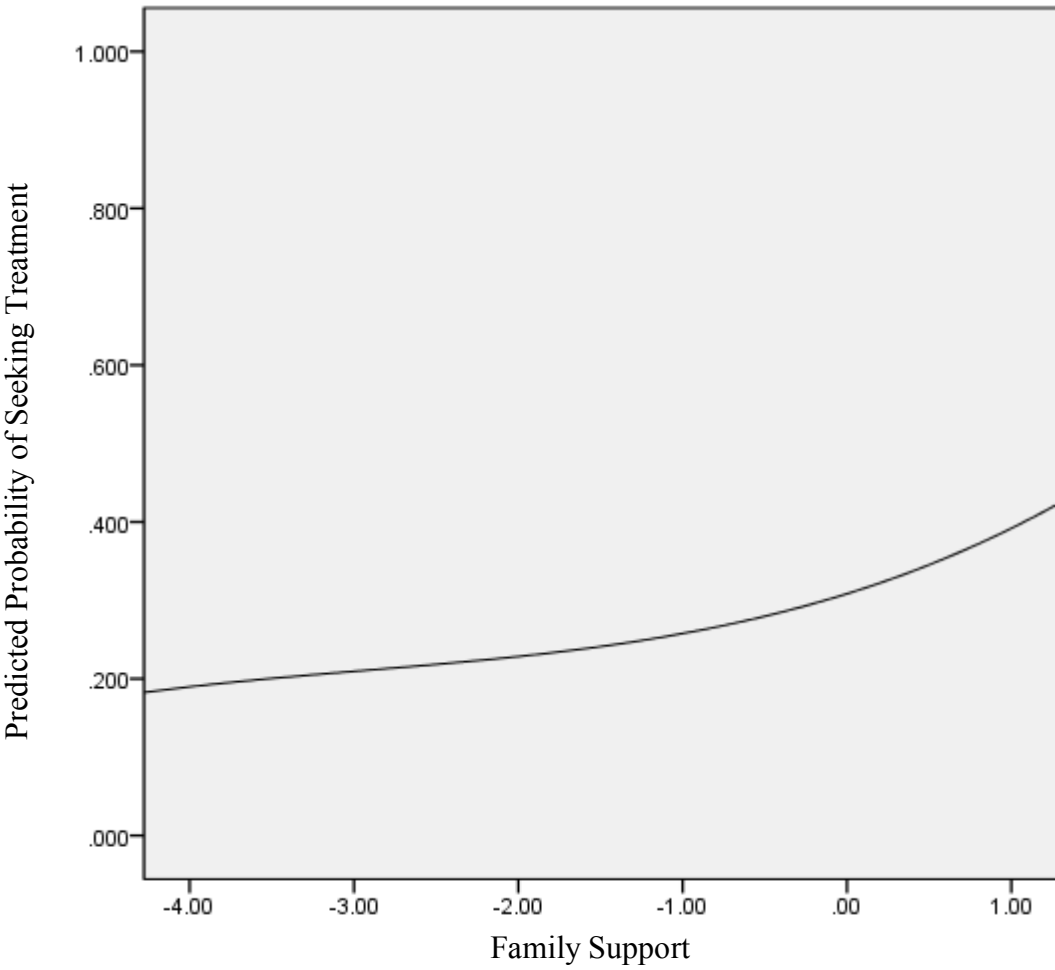


Figure 5. Interaction between the mediated effects of family support through attitude toward seeking treatment on treatment seeking.

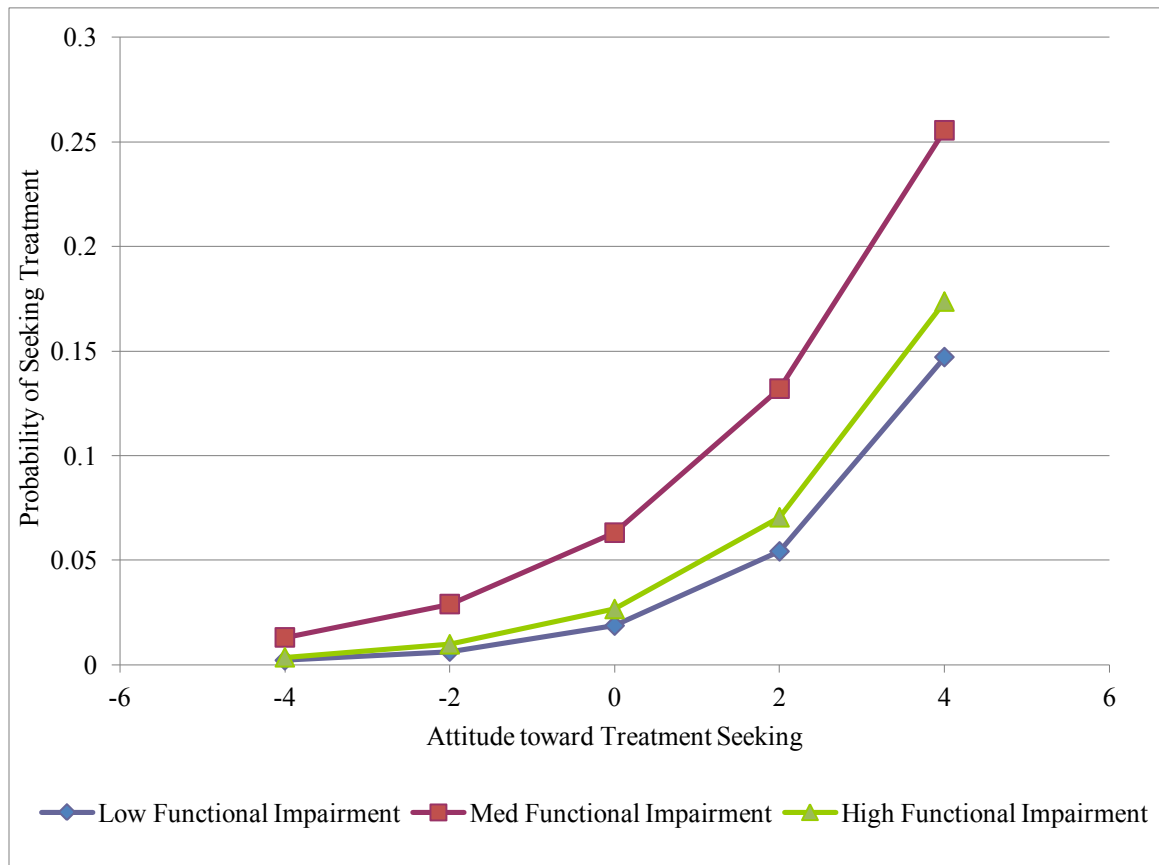


Figure 6. Effect of family influence to getting treatment on the probability of dropout.

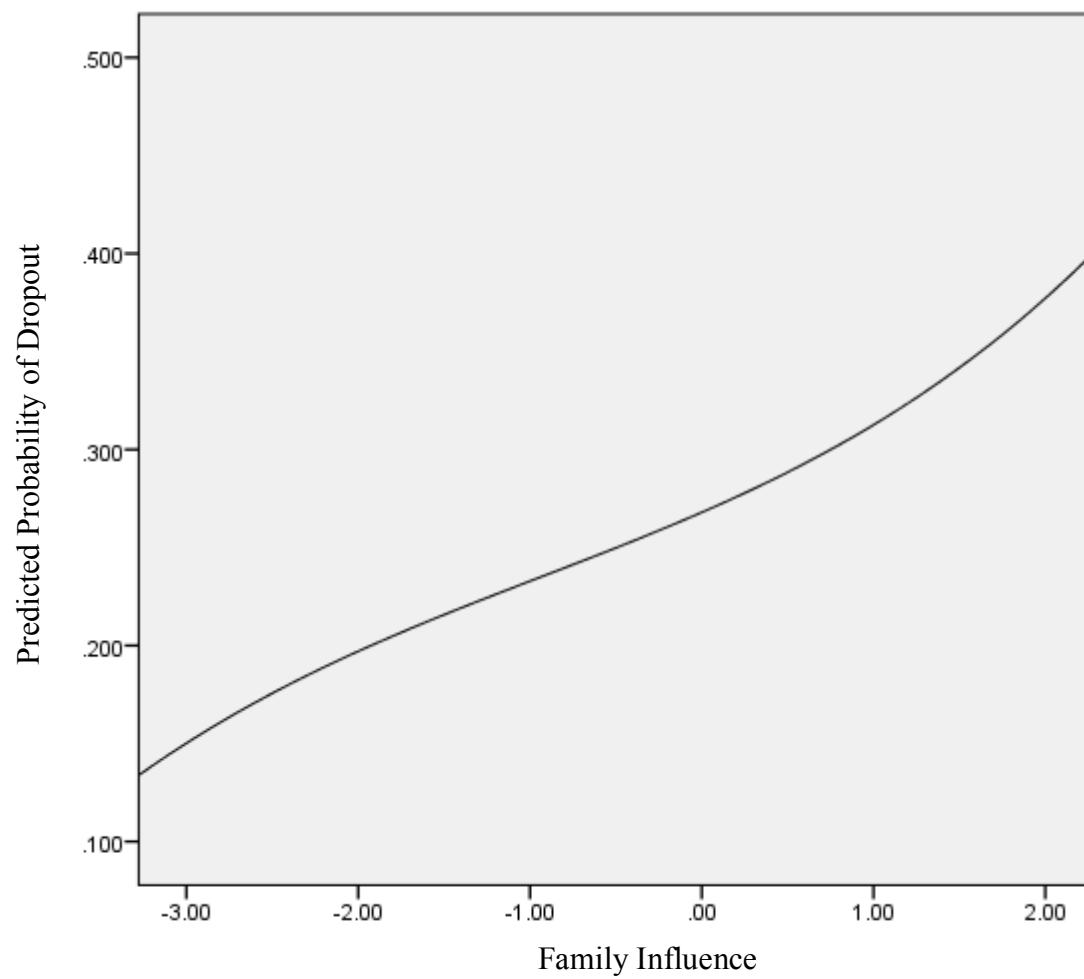


Figure 7. Non-linear effect of functional impairment on probability of dropout.

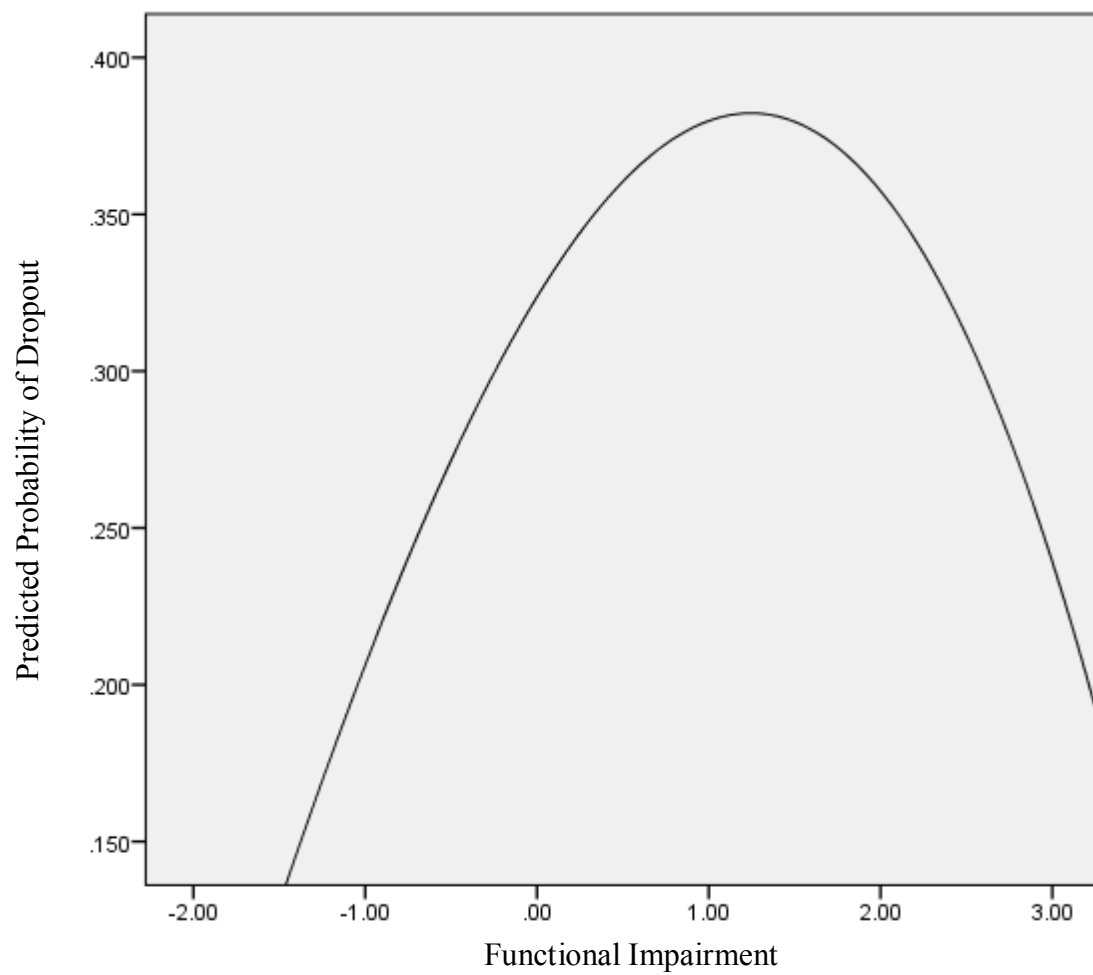


Figure 8. Interaction between informational support from leaders and functional impairment predicting treatment dropout.

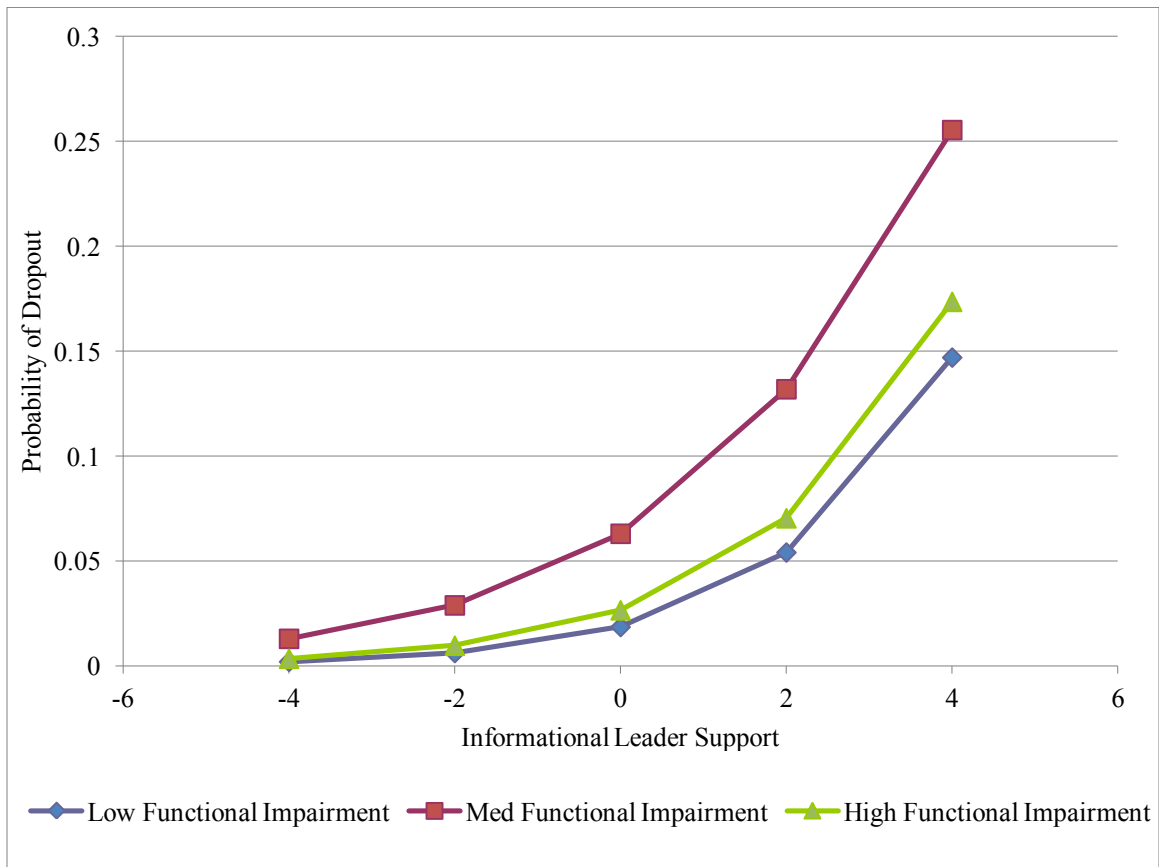


Figure 9. Interaction between emotional support from leaders and functional impairment predicting dropout.

